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COMMENTARIES

UPON

BOERHAAVE's

APHORISMS

CONCERNING THE

KNOWLEDGE and CURE of DISEASES.

BY

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Tranſlated from the LATIN.

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PREFACE.

I HAVE to acknowledge, that in reſpect to the publication of theſe and the remaining ſheets of the commentaries upon the preſent aphoriſms, I promiſed to perform the taſk I had undertaken in a ſhorter time than has ſince lain within my power to accompliſh: but there have been many weighty avocations ſince laid upon me, which I was unable to foreſee. For who could have imagined, that the auguſt Empreſs I ſerve, would, in the midſt of the tumults of war, not only meditate plans for the reſtoration of learning and uſeful arts; but even proceed to the execution of them, beyond what one could hope for in times of the greateſt tranquillity? It has been her pleaſure to have the *Tereſian College* erected here under her protection, for the youths of her nobility, that they might therein proſecute their ſtudies in divinity, in languages, in philoſophy, in the laws, *&c.* At the ſame time ſhe laid her commands upon me to charge myſelf immediately with the care of the numerous youths that ſo ſpeedily aſſembled themſelves under the extended wings of their Minerva; thinking it moſt fit that the heirs of the greateſt perſonages, as the hopes of her kingdoms, ſhould make uſe of the ſame phyſician whom ſhe had judged worthy to be entruſted with the healths of her own auguſt family.

It was alſo the pleaſure of her imperial Majeſty, that I ſhould enter into ſerious conſiderations about reforming and improving the ſtudy of Medicine in this moſt ancient univerſity; in the proſecution of which it appeared, in my judgment, neceſſary

neceſſary and uſeful to lay down firſt a Plan of the Method of Learning the Faculty of Medicine, before I could publicly dictate the Inſtitutes of that Faculty. This was a new labour to me; and, indeed, not a ſlight one.

Yet this was not all; but I muſt likewiſe preſide in the affairs of the Faculty, and be preſent at all the examinations, &c. ſince it was the opinion of her auguſt Majeſty, that my ſtation had an alliance to thoſe calls; and there ſeemed to her no other way of exterminating the abuſes that had inſenſibly crept in, than by demanding of me to take the perpetual province of Preſident over our excellent Faculty of Medicine.

To all theſe again was added another weighty charge, *viz.* that of the Imperial Library; and, with this, a new labour, which in courſe devolved upon me as the new maſter of the ſaid library, namely, To cenſure, or paſs judgment upon, all the books in phyſic, philoſophy, philology, hiſtory, miſcellanies, &c. For the pious care of her Imperial Majeſty had iſſued the ſtricteſt laws, by which all books were commanded to be baniſhed her dominions that had the leaſt tendency to corrupt the principles of religion and morality. Yet ſhe would allow no book to be condemned but what ſhould be firſt read, and adjudged by the general conſent of all the Cenſors to be worthy of condemnation.

In this labour, indeed, were aſſociated with me two incomparable aſſiſtants, namely, both the keepers of the Imperial Library; whoſe erudition and ſkill in numerous languages are ſuch, that there is hardly any tongue in which a book can appear, but one or other of us is able to read and underſtand it. Their aſſiſtance, however, would not excuſe me from ſpending much time at the work,

work, which often gave no better entertainment than the turning over of trifles, or the more diſagreeable aſpect of traſh. However, the proſpect of conſiderable utility to poſterity eaſily ſatisfies me for the fatigues of that work.

From hence all candid judges may conclude, that neither love of idleneſs, nor the delights of a court, had any ſhare in cauſing me to appear later to my readers than I gave them to expect. For the ſame cauſe has retarded this work, which firſt moved me to engage in it; namely, the public utility, or good of mankind, for the promoting which I have entirely devoted myſelf.

Now although I am beginning to aſcend the threſhold of advanced age, and continue preſſed by the ſame labours; yet finding my body in ſound health, and my mind not impaired in the ſtrength of its faculties, I am therefore in hopes to finiſh the laſt part of this work, on which I am now labouring, in a much ſhorter time than this has been expected.

COMMENTARIES

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CONCERNING THE

KNOWLEDGE and CURE of DISEASES.

Of a PLEURISY.

§. 875. A PLEURISY is said to be present, when a person labours under an acute continual fever (§. 564, 567.) with a hard pulse, and a sharp pricking inflammatory pain in the side (§. 382, n° 3.) which greatly increases in the act of inspiration, but abates in exspiration, or by holding the breath; also becomes milder when the breathing is performed by the abdomen chiefly, without moving the breast: there is likewise a cough, which is almost incessant, and which exciting great pain is therefore stifled or suppressed by the patient.

The side of the breast is by the Greeks called πλευρὰ and πλευρα; whence πλευραι, *pleuræ*, the *sides*, are often used for the *ribs*; for by this denomination they have been called by Pollux[a]: but as he called those parts which are seated under the arm-pits by the title of *pleuræ* or *sides*, he thence named this disease which surrounds the ribs *pleuritis*, a *pleurisy*; and this by the same

[a] Jul. Poll. Onomastic. lib. ii. cap. 4, n° 166, 167. Tom. I. p. 234, 235.

ſame rule that the diſeaſe of the joints has been called *arthritis*, and that of the kidneys *nephritis*. Hence the Latins have entitled this the *diſeaſe of the ſides*; and therefore the diſeaſe, *pleuriſy*, ſeems aptly enough ſo called from its ſeat. Thus Celſus tells us, That *the gula, or meat-pipe, is ſurrounded by the ſides; and in theſe laſt it is uſual for violent pains to be ſeated* [b]. Now although in our days it is cuſtomary for many to call the ſtomach itſelf by the name *ſtomachus*, yet Celſus intends by it the gula or œſophagus, as appears from other places [c].

But the definition of a pleuriſy here given, is not taken from a knowledge of the immediate cauſe of the diſeaſe, (which remains to be defined;) but from a collection of thoſe appearances which attend upon the diſeaſe, and from the preſence of which the unanimous conſent of phyſicians aſſures us there is ſuch a diſeaſe before us; for we have ſeen before (at §. 820.) that there are two methods of defining diſeaſes. There is therefore nothing here ſaid either of the part affected in a pleuriſy, or of its immediate cauſe, concerning all which we are to treat hereafter; but the text barely informs us that "a pleuriſy is ſaid to be "preſent when, *&c.*" This method of definition is particularly choſen for a pleuriſy, becauſe the parts affected are ſomewhat controverted amongſt authors, but concerning the pathognomic or declarative ſigns they are univerſally agreed. Galen, however, joins both methods of defining together, when he deſcribes a pleuriſy; for he determines both the immediate cauſe of the diſeaſe, and the parts affected; and likewiſe enumerates the principal ſymptoms. His words are, *Thoſe inflammations which ariſe in the membrane which ſurrounds the ribs, and in the muſcles which are therewith continuous, make the diſeaſe which we call a* pleuriſy: *and this has for its inſeparable ſymptoms, An acute fever; a pain, as if the parts were over-ſtretched or pricked; the breathing little, and frequent; the pulſe ſmall; and the artery in a peculiar manner tenſe and commonly*

[b] Stomachus lateribus cingitur; atque in his quoque vehementes dolores eſſe conſueverunt. *Lib.* iv. *cap.* 6. *p.* 209.

[c] Ibid. cap. 1. p. 182, 184.

hard, by which it is pointed out to us: A cough alſo moſt commonly attends it, and a coloured ſpitting; but ſometimes they are abſent, [d] &c. The ſame definition of a pleuriſy is alſo given us by *Aretæus* [e], *Ægineta* [f], and *Trallian* [g].

It now remains for us to explain each of the appearances that make a part in our definition before given.

Pain attends in every pleuriſy, but not every pain of the ſide is to be entitled a pleuriſy, as Trallian hath well obſerved to us [h]. Therefore it is that Hippocrates [i], in reckoning up the diſeaſes of winter, mentions, in one and the ſame aphoriſm, pleuriſies and pains of the ſides and breaſt diſtinctly. For to denominate the pain a *pleuriſy*, requires it to be accompanied with *an acute continual fever*. Celſus hath very well obſerved this diſtinction, in treating upon pains of the ſides: *But ſometimes this malady is only a pain inwardly, which diſperſes or goes off without further miſchief, either ſooner or later: but ſometimes it goes on to a kind that is more pernicious, and gives riſe to the diſeaſe which the Greeks have named a Pleuriſy; in which caſe, the pain of the ſide is joined with a fever and a cough* [k]. Upon this account Ægineta [l], after having treated of a pleuriſy, ſubjoins remedies for pains of the ſides which are without a fever, and which he diſtinguiſhes by a peculiar title. Accordingly Juvenal [m] has admirably well expreſſed this diſeaſe, when he ſays;

Præterea, lateris vigili cum febre dolorem
Si cœpere pati, miſſum ad ſua corpora morbum
Infeſto credunt a Numine, &c.

d Quæ in ſuccingente coſta membrana, ac muſculis illi continuis, fiunt inflammationes, morbum faciunt dictum pleuritidem: haec quidem habet inſeparabilia ſymptomata, febrim acutam, dolorem ac ſi loca (affecta) diſtraherentur vel pungerentur, reſpirationem frequentem et exiguam, pulſum parvum, arteriam duram, et quodammodo tenſam, indicantem: tuſſim ut plurimum quidem cum ſputis coloratis, raro et ſine his, &c. *De Locis Affectis, lib.* v. *cap.* 3. *Charter. Tom. VII. p.* 488.

e De Cauſis et Signis Morbor. Acutor. lib. i. cap. 10. p. 8. f Lib. iii. cap. 33. p. 40. verſa. g Lib. vi. cap. 1. p. 266. h Ibidem.

i Aphor. 23. ſect. iii. Charter. Tom. IX. p. 118.

k Sed interdum id malum intra dolorem eſt: iſque modo tarde, modo celeriter ſolvitur. Interdum ad perniciem quoque procedit, orituruque acutus morbus qui πλευριτικος a Græcis nominatur. Huic dolori lateris febris et tuſſis accedit. *Lib.* iv. *cap.* 6. *p.* 209.

l Lib. iii. cap. 33. p. 41. m Lib. v. Satyr. 13. ver. 229.

For there are many known caufes which produce a pain of the fide, which is however not pleuritic. We have before obferved from Hippocrates and Galen, in our comment upon Contufion, §. 326, that fometimes the mufcles undergo fuch violent ftrainings by racing, wreftling, lifting great weights, *&c.* that even fome of their fibres are thereby broken; in which cafes the ancient phyficians have called the over-ftrainings σπασματα, and the rupture of fibres ῥηγματα; and have admonifhed us, that intenfe pains enfue thence, and fuch as are more efpecially difficult to remove, about the thorax or breaft. Such pains are again obferved in hyfteric and hypochondriac perfons, in whom they are often very fharp, but without a fever; and for thefe pains, the treatment of a pleurify, by copious and repeated blood-lettings, would be not at all fuitable. For, as we before obferved from Sydenham, in commenting on §. 633. this wonderful diftemper is able to put on a great variety of appearances, fo as to refemble almoft every other diforder. Sometimes alfo we meet with refembling pains from the gout driven inward from the extremities.

Thefe two therefore, *pain*, and an *acute continual fever*, always attend upon every pleurify. What we mean by an Acute Fever has been declared before at §. 564; and we alfo remarked at §. 567, that thofe cafes which are joined with fuch a fever are called Acute Febrile Diftafes. Now a pleuritic pain is not flight and dull, but *fharp* and *pricking*, fuch as we before fhewed to arife from diftenfion of inflamed veffels (§. 382, nº 3.); which is a remark taught us by Galen, and the other Greek writers, who have given us the defcription of a Pleurify. This ought more particularly to be remarked, becaufe even in fevers Hippocrates has obferved pains of the fides *not pleuritic;* concerning which you may confult the comment upon §. 772. For thus in his Coan Prognoftics we read, that *blood-letting is prejudicial in flight pains of the fides, which attend fevers that have not urgent figns* [n].

For

[n] Dolores circa latus, in febribus tenuiter conſiſtentes, abſque ſignis, venæ ſectio lædit. Nº 491. *Charter. Tom. VIII. p.* 880.

For here he ſeems to treat of pains which are not very acute, nor accompanied with the other ſigns of a pleuriſy. Duretus [o] indeed is of opinion that the words (εν πυρετοισιν) *in febribus*, "with fevers," are better read (απυρετοισιν) *febribus expertibus*, "without fevers:" but it will perhaps appear more probable that we ought to make no change in the text, if we conſider that in the very ſame preſage Hippocrates reckons up another diſeaſe in which veneſection is alſo pernicious; namely, in the cold ſluggiſhneſs or torpidity; where he expreſsly adds (ου απυρους) *febribus non expertibus*, "not "without fevers."

But a *hard pulſe* is remarked in the generality of the more acute inflammatory diſeaſes, from the more denſe and compact blood paſſing more difficultly through the extremities of the capillary arteries [p]: ſuch a pulſe is therefore obſerved to us by Galen, in his deſcription of a Pleuriſy, as we ſaid before; and in another place he remarks [q], that the hardneſs of the pulſe in pleuritics occaſions the unſkilful to take it for one *vehement* or *ſtrong*; ſuch, namely (*qui durum ictum nequeant a vehemente diſtinguere*) "as cannot diſtinguiſh betwixt "the *hardneſs* and the ſtrength of the ſtroke." However, this ſign may ſometimes be deceptive, when the ſick cannot take in their breath for the ſeverity of the pain, to avoid which they almoſt ſuffocate themſelves: for then a peripneumony begins to ariſe from the pleuriſy, and the pulſe ſeems ſmall and ſoft; of which we ſhall treat hereafter at §. 883.

But ſince, when the thorax is dilated by *inſpiration*, the inflamed parts are more ſtretched, the pain will conſequently be at that time *increaſed*; and for the ſame reaſon it will be *ſlighter* during the *exſpiration*, and when the ſick hold their breath. From hence it is that thoſe who have a violent pleuriſy ſcarcely breathe, to avoid the ſeverity of the pain; whence they almoſt ſuffocate themſelves. Hence it is that ſuch patients are often eaſed in their pain, while the thorax remains bound up with a roller, ſo as to allow

[o] In Coacas Hippocrat. p. 387. [p] H. Boerhaave Inſtitut. §. 962. [q] De Pulſib. ad Tyrones cap. 12. Charter. Tom. VIII. p. 9.

little or no dilatation to the breaſt in reſpiration; for in that caſe inſpiration is performed principally by the abdomen, without moving the thorax. For in the act of inſpiration the thorax is dilated not only by the motion of the ribs, but likewiſe by that of the diaphragm; which being drawn downwards enlarges the capacity of the cheſt, while at the ſame time it leſſens that of the abdomen; whereupon the abdominal viſcera, being compreſſed, urge againſt the muſcles of the venter, and thruſt out the belly. Therefore, while the thorax is thus immoveably bound up, there may be ſtill a ſufficient ſpace made for dilating the lungs by the inſpired air, while the diaphragm is drawn downward; which now probably acts with a greater force than when the thorax is conjunctly dilated with it: thus we ſee the manner in which the breathing, abſolutely neceſſary to life, may be ſtill carried on. But the breathing will alſo ſuffer more or leſs impediment according to the ſituations of the inflamed parts, as will hereafter appear §. 877.

Now a *cough* is almoſt conſtantly preſent with a pleuriſy; for which reaſon it is always ranked, by the beſt writers, amongſt the ſigns of the diſtemper. But if inſpiration itſelf ſo much excites the pain of a pleuriſy, it will be evidently much more increaſed when the cheſt is ſhook by a cough; for which reaſon ſuch patients endeavour to ſtifle the cough as much as poſſible, and when their efforts are inſufficient they are often convulſed by the ſeverity of the pain.

An aſſemblage of all theſe appearances together plainly point out a pleuriſy: but then, as *Aretæus* very well obſerves, *It is neceſſary for all theſe ſigns of a pleuriſy, concurring together, to agree in their reſulting from the ſame cauſe; for whenever any of them are incidentally produced from another cauſe, although they may all concur together, they make not what we call a pleuriſy*[r]. For if (*e. g.*) a pain of the ſide ariſes from an over-

[r] Opus eſt autem, omnia haec (pleuritidis phaenomena nempe) inter ſe conſonare atque conſpirare, ab una cauſa pendentia. Quaecunque enim ex his ſparſim alia ab alia cauſa producuntur, etſi omnia ſimul ingruunt, pleuritis non vocatur. *Lib.* i. *de Cauſis et Signis Morbor. Acutor. cap.* 10. *p.* 8.

over-ſtretching of the parts by violent ſtrainings, or if a cough attends from a deflaxion or taking cold, while an acute continual fever is alſo excited from any other cauſe, (as any contagion of the ſmall-pox, meaſles, or other epidemical matters), we ſhall then indeed meet with all the pleuritic ſymptoms together, while at the ſame time we cannot call the diſeaſe a pleuriſy, becauſe they do not all take their origin from one and the ſame cauſe.

§. 876. WHENEVER, with theſe ſymptoms, there are alſo incidental or ſymptomatic ſpittings from the lungs, the pleuriſy is then ſaid to be *humid* or *humoral;* but when diſcharges by ſpitting are abſent, it is then termed *dry*.

Having now taken a view of the ſigns by which a preſent pleuriſy may be known, it follows that we now conſider the different kinds of this diſeaſe: for it has by medical writers been diſtinguiſhed into *dry* and *humoral*, *true* and *ſpurious*, *original* and *ſymptomatic*. Of the dry and humoral pleuriſy, we are to treat under the preſent aphoriſm; of the reſt, in the following.

A cough is almoſt a perpetual attendant on a pleuriſy: And ſince ſpittings are of the utmoſt importance in a peripneumony, and a pleuriſy itſelf is frequently terminated by a ſpitting, as will appear at §. 888. therefore, in the beginning of a pleuriſy, ſkilful phyſicians always obſerve whether there be any ſpitting diſcharged with the cough, and of what kind. Whenever any ſpitting is expectorated by the cough, whatever appearance it may have, the pleuriſy is then termed *humoral* or *humid;* but if the cough be dry, or fruitleſly troubleſome to the patient, the pleuriſy is termed *dry;* and from hence we derive the firſt and moſt obvious diſtinction of a pleuriſy, formerly remarked by Hippocrates [s], Galen [t], Celſus [u], Tralli-an [w], and others of the ancients.

But

[s] De Morbis lib. iii. cap. 15. Charter. Tom. VII. p. 590. [t] De locis affectis lib. v. cap. 3. ibid. p. 488. [u] Lib. iv. cap. 6. p. 209. [w] Lib. vi. cap. 1. p. 267.

But ſince it is a valuable obſervation of Galen, as we declared before in ſpeaking of pleuritic and peripneumonic affections §. 830, no 2. that this diſcharge which is made by ſpitting has a near affinity to the ſediments of urines, (which point out either crudity or concoction in acute diſeaſes, for which reaſon he has pronounced a dry cough without any ſpitting to have the ſame import with a watery urine, which is deſervedly reckoned the moſt crude and of the worſt preſage;) from thence it is evident, that the diſtinction of pleuriſies into *dry* and *humoral* conduces much towards forming a juſt prognoſis. For a dry pleuriſy is by all condemned as the moſt dangerous, troubleſome to treat, and difficult to bring to a concoction or criſis [x], either ſnatching off the patient with great rapidity, or not diſperſing itſelf till after a very long time [y], Celſus however, though he condemns a dry cough in this diſeaſe, ſeems yet to have judged a bloody ſpitting to be here of worſe conſequence, when he ſays: *To this pain of the ſide there is joined a fever, and a cough: and by this laſt, if the diſeaſe be tolerable, there is made a phlegmatic diſcharge; but if violent, blood is ſpit up. Sometimes alſo there is a dry cough, in which nothing is expectorated; and this is a ſymptom worſe than the phlegmatic ſpitting, but more tolerable than the bloody* [z]. However practical experiences aſſure us, that a pleuriſy is often attended by a ſpitting that is tinged with blood, which yet proves much leſs injurious than when the diſeaſe is without any ſpitting at all.

§. 877. THERE is no part of the internal coverings of the thorax which this inflammation does not invade: therefore the whole of the pleura, and the whole mediaſtinum, are

[x] Vide locum citatum Tralliani et Hippocratis, uti et Coac. Prænot. no 381. Charter. Tom. VIII. p. 873. [y] Vide Galeni locum citatum.

[z] Huic dolori lateris febris et tuſſis accedit: per hanc excreatur, ſi tolerabilis morbus eſt, pituita; ſi gravis, ſanguis. Interdum etiam ſicca tuſſis eſt, quae nihil emolitur, idque vitio primo gravius, ſecundo tolerabilius eſt. *Lib.* iv. *cap.* 6. *p.* 209.

are equally ſubject to this malady, whether in their fore-part or back part, on the right ſide or the left, above or below, more outwardly or inwardly ſeated: but the ſides are more eſpecially liable to it.

We come now to review the parts affected in a pleuriſy. Indeed all the ſymptoms inform us, that there is a violent inflammation in this malady; but phyſicians are not all agreed upon the parts in which this inflammation is ſeated. The moſt acute pain felt during the inſpiration of pleuritic patients, teaches us, that in that time the inflamed parts are agitated or ſtretched. The membrane which the ancients have called *ſuccingent*, or *ſurrounder of the ribs*, is by many aſſigned as the only and proper ſeat of a pleuriſy; but ſince, the name of *pleura* has by phyſicians been generally uſed (perhaps with leſs propriety *) to denote this ample membrane which lines the whole interior capacity of the thorax, covers the pericardium, and by its duplicature conſtitutes the mediaſtinum (ſee comment to §. 170, no 4.) For ſuch is the deſcription of this diſeaſe given us by Aretæus: *About the ribs, back, and internal parts of the breaſt as far as the clavicles, is ſpread a thin ſtrong membrane that grows to the bones; and to this has been given the name of ſuccingent. When a phlegmon ariſes in this membrane, there is a fever, with a cough, and a various ſpitting; but this malady is called a pleuriſy*[a]. To this opinion Ægineta[b] and Trallian[c] have alſo ſubſcribed. Celſus indeed[d] ſays nothing of the parts affected, when he deſcribes this diſeaſe: but Galen (as we obſerved at §. 875.) lays it down, that an inflammation, not only in the ſuccingent membrane, but alſo in the muſcles that are continuous with it, conſtitutes a pleuriſy.

But

* Petit. Comment. in Aretæum, p. 151.

[a] Sub coſtis, dorſo, et internis pectoris ad claviculas uſque, tenuis membrana robuſta ſubſtrata eſt, oſſibus adnata, cui nomen ſuccingens. In hac quum phlegmone ſuborta fuerit, febris (adeſt) cum tuſſi, et ſputis variis, pleuritis vocatur ille affectus. *Lib.* i. *de Cauſis et Signis Morbor. Acutor. cap.* 10. *p.* 8.

[b] Lib. iii. cap. 33. p. 40. verſa.

[c] Lib. vi. cap. 1. p. 266.

[d] Lib. iv. cap. 6. p. 209, &c.

But as there is a very near affinity betwixt a pleurisy and a peripneumony; as they often arise from the same causes; as both distempers have a cough; as a pleurisy is often relieved by a spitting from the lungs; and as a peripneumony often accompanies a severe pleurisy, or almost constantly follows after it: therefore some physicians of great note have been of opinion, that the same parts, namely, the lungs, were affected in both these maladies. Dr Sydenham has acknowledged so near an affinity betwixt a peripneumony and a pleurisy, that, after weighing all the symptoms or appearances of the last, he concludes, "I conceive "it to be only a fever occasioned by a peculiar inflam- "mation of the blood, whereby nature throws off the "peccant matter upon the *pleura;* and sometimes up- "on the lungs, whence a *peripneumony* arises; which, "in my opinion, only differs from a *pleurisy* in degree, "and in respect of the greater violence and larger "extent of the same cause[e]." But in the mean time he assigns a distinct seat to each of these maladies.

Nor is it a novel notion, that the lungs are the parts affected in a pleurisy; for Aurelian[f] reckons up a number of ancient physicians who defended this opinion. And even in Hippocrates there are found some passages which seem to favour the same: for thus, in treating of a defluxion settling upon the breast[g], he observes, that the lungs being naturally dry and spongy, draw to themselves the conflux of humours, by which they swell, and come in contact with the side; which taking place in both lungs, makes a peripneumony; but in either of them singly, a pleurisy. In another place[h] he says, a pleurisy happens when either side of the lungs, being greatly dried by the violence of thirst, lies impotent or unactive on the side or ribs with which it is contiguous: but we know from physiology, that the lungs are naturally always contiguous to the pleura; and we have made it evident enough in the history of a Peripneumony, that the origin of a pleurisy can by no means be owing to that cause.

The

[e] Sect. vi. cap. 3. p. 334. [f] Acutor. Morbor. lib. ii. cap. 16. p. 115. [g] De Locis in Homine, cap. 7. Charter. Tom. VII. p. 365. [h] Ibidem, cap. 10. p. 369.

The celebrated Hoffman [i] was of opinion, that in a *baſtard* or *falſe* Pleuriſy, the inflammation occupied only the external parts; but that if it invaded the ſurface of the membranous ſubſtance of the lungs, like an eryſipelas, it made then a *true* Pleuriſy; and if it yet deſcended deeper into the ſubſtance or body of the lungs, it then conſtituted a peripneumony. The ſame opinion has been embraced by the learned Triller, in his elegant and uſeful tract relating to this diſeaſe; and therefore he concludes we had better call the diſeaſe a *pleuripneumony*, or a *peripneumopleuriſy* [k]. Certain we are that the pleura is not ſolely or conſtantly the ſeat of a pleuriſy; and we have ſhewn before, that Galen himſelf adds the muſcles which adhere to it: and hereunto we ought to add the cellular web, or adipoſe membrane, which makes ſuch a conſiderable appearance in the ſpaces betwixt the ribs of fattened animals, and which in our comment to §. 374. we proved to be the moſt frequent and ſtubborn ſeat of inflammation; for a phlegmon once formed may ſo enlarge or diſtend the adipoſe membrane into a tumor, as to ſtrain the incumbent pleura with exquiſite pain [l]. Since therefore it appears, from the hiſtory of inflammation before given (§. 373.) that all parts of the body may become the ſeat of a phlegmon, in which we obſerve the diſtribution of arterial net-works, or the origin of lymphatic arteries; it is therefore plain that the ſame may take place in the pleura, ſurrounded with the incumbent fat, and intercoſtal muſcles: and from hence we may conclude, that the membranous pleura may be the ſeat of a pleuriſy, even though the malady may have no fixed reſidence within its ſubſtance, as many have affirmed; for the phlegmon is oftener found within the fat and intercoſtal muſcles.

Certainly the very ſharp pain, which in a pleuriſy pierces the ſide immediately upon the firſt effort of inſpiration, ſeems to teach us, that the diſeaſe is not confined to the lungs only; ſince frequently there is no

i Medicin. Ration. Syſtematicæ, Tom. IV. ſect. ii. cap. 6. p. 426, 427.
k Cap. i. p. 9.
l Abrah. Kaau Perſpirat. Hippocrat. cap. 7. nº 143. p. 66.

no pain at all in a true peripneumony, and ſometimes the patient feels only an obtuſe pain, as we have ſeen before. But does it ſeem credible, that in a violent peripneumony the phlegmon ſhould not extend enough to the membranous ſurface, which is the ſuppoſed ſeat of a pleuriſy, as to excite therein a ſharp pain? It is true indeed, that, in opening bodies deceaſed of a pleuriſy, we often obſerve no great diſorder in the pleura. Accordingly Jacotius [m] confeſſes, that, in the diſſections of pleuritics, he rarely obſerved any ſwelling in the pleura, although there had been a phlegmon antecedent. But then, this membrane being thin and tenſe ſhews no conſiderable ſwelling, although it may be inflamed; for in a phlegmon the bulk of a ſwelling depends almoſt entirely upon the turgeſcence of the adipoſe or cellular ſubſtance. Conformable to this, we have known inflammations of the perioſteum, ligaments, and meninges of the brain, excite the moſt ſevere pains, without any remarkable tumor: therefore it is that Jacotius adds to his former remark, "By the name of *inflammation* we underſtand, not "only an immoderate quantity of blood collected in "any void ſpaces, but alſo any exceſs of it within the "ſmall veſſels of a part [n]." Indeed the teſtimony of Peter Servius ſeems to be of conſiderable weight, who, after opening three hundred perſons deceaſed of pleuriſies at Rome, always found one lobe of the lungs corrupted and diſtended with a putrid matter; but the pleura appeared not at all affected, or at moſt but ſlightly diſordered [o]. But, if we conſider, that a pleuriſy and peripneumony are often conjoined together; and that it is not from the pleuriſy only that the patient dies, nor from any inflammation of the coſtal interſtices, but oftener becauſe the immenſe pain occaſions the neceſſary motion of the thorax to be ſuppreſſed, whereby the courſe of the blood being ſtopped through the lungs brings on a fatal peripneumony, (ſee §. 905.); from thence the reaſon will be evident, why in bodies deceaſed of a pleuriſy the diſorder

[m] Hollerii Commentar. in Coac. Hippocrat. p. 429. [n] Ibidem.
[o] Triller. de Pleuritide, cap. 1. p. 10.

order is constantly found in the lungs, while the pleura appears but slightly affected: for it is remarkable, Servius does not deny the pleura to be affected, only confines it to a small degree; therefore the nearer cause of death was by him found in the disordered lungs, although the original distemper might lie seated in the pleura, or in the adjacent muscles and panniculus adiposus. But that the pleura is truly affected in this distemper, stands confirmed by a great number of observations. Aurelian tells us, *It is a true conjecture that the pleura itself suffers in this distemper: for in the pleuritic bodies, by an increase of the swelling or phlegmon, it forms a head or gathering, and in those who are deceased it is often found of a black colour* [p].

Diemerbroeck [q] dissected, before many spectators, in the public hospital, a woman deceased of a pleurisy, who had for the first fourteen days been most severely afflicted by the distemper, but afterwards, a suppuration being formed, the malady seemed abated for some days, until at length death brought it to a period. In this case, he found the lungs quite at liberty from the pleura, the whole of which was inflamed on the right side, from the arm-pit down to the diaphragm: an abscess had also broken itself about the fifth and sixth ribs, so that two of the ribs were thereby laid naked of their pleura, for the compass of two fingers breadth, and a moderate quantity of pus or matter was thence discharged into the capacity of the thorax: but that lung was found without inflammation, or any injury from other causes. The like circumstances he observed in the body of a man who died of the same disease; from whence he concludes the opinion to be false, which fixes an inflammation of the surface of the lungs as a constant attendant on a pleurisy. Moreover, in the bodies of persons deceased of a peripneumony, he found one half of the lungs inflamed in their outer surface, although the patient, during life,

[p] Manifesta namque conjectura est, quod ipsa (pleura) patiatur. Siquidem tumoris augmento collectionem in pleuriticis faciat, et exspirantibus sæpe ægrotis nigra inveniatur. *Acutor. Morbor. lib.* ii. *cap.* 16. p. 117.

[q] Anatom. lib. ii. cap. 13. p. 309.

complained but of a heavy pain. Harderus[r] hath alſo remarked the pleura to be affected in the like manner, in perſons dead of a pleuriſy; to which we could add other authorities, but too numerous to be here recounted.

Even Hippocrates[s] expreſly pronounces, that bile, and pituita or ſize, impacted into the ſide, cauſes a pleuriſy; but when the ſame are drawn in upon the lungs, they make a peripneumony.

From all we have advanced, then, it may be concluded, that the pleura, incumbent on the coſtal muſcles, and contiguous to the fat, is truly the part affected in a pleuriſy; but that the lungs alſo may become affected in the ſame malady, by ſtifling the reſpiration, by which they may be inflamed; but then this inflammation of the lungs is altogether diſtinct from that of the pleuriſy. Nor is the cough any objection to this, which ſome phyſicians of note have thought muſt ariſe from the lungs alone affected: for when the intercoſtal ſpaces are ſwelled out by inflammation, they may preſs upon and irritate the lungs ſo as to produce a cough; or even the reſpiration itſelf impeded, by the ſeverity of the pain, may excite a cough. For thus, in gravid women, where the womb riſing out of the pelvis preſſes upward the viſcera of the abdomen, ſo as to hinder the free motion of the diaphragm, we ſometimes meet with a very troubleſome cough[t]. Any irritation of the inner nares, or a rough touching of the membrane that lines the meatus auditorius, may alſo excite a cough. If therefore a cough may be thus occaſioned by irritation of other parts far diſtant from the lungs, much more may it be excited by inflammation and pain of thoſe parts which are actually contiguous with the lungs. Hippocrates[u] obſerves, that a cough attended in a tumour of the ſide; which he ordered to be laid open either by cautery or inciſion, when it ſhould come to a ſuppuration. Even the pus-like ſpittings that are diſcharged

[r] Harder. Apiar. Obſer. 53. p. 222, 223. [s] De Morbis, lib. i. cap. 2. Charter. Tom. VII. p. 546. [t] Mauriceau, Tom. I. liv. i. chap. xvi. p. 141. [u] De Morbis, lib. ii. cap. 24. Charter. Tom. VII. p. 575

charged in pleurifies, come from the lungs; but of this we ſhall ſpeak more hereafter at §. 888, nº 6. where it will appear, that even from the ſpittings we cannot conclude that in every pleuriſy the lungs are always and primarily affected.

Since therefore an inflammation in the membrane itſelf which we call the *pleura*, and upon which lies the fat and intercoſtal muſcles, may cauſe a pleuriſy; it is evident, that the malady thus called may be ſeated in very different and even remote or diſtant parts of the body: for the whole internal circumference of the thorax is covered by theſe, and the mediaſtinum itſelf is compoſed of a duplicature of the pleura with ſome of the cellular ſubſtance placed between the folds; and the pleura is alſo ſpread over the pericardium and diaphragm. However, it has been cuſtomary with phyſicians to call the diſeaſe a *paraphrenitis*, when the inflammation invades that part of the pleura which is ſpread upon the diaphragm: and concerning this, becauſe it has ſome peculiar ſymptoms, we ſhall treat hereafter in a peculiar chapter; and in the ſame place we ſhall add the moſt conſiderable part of what we have to ſay upon an inflammation in the pericardium, and mediaſtinum particularly.

I have obſerved pleuriſies ſeated throughout the whole extent of this membrane; and the like is occaſionally confirmed by the teſtimonies of authors of the beſt repute: but moſt frequently of all, the ſides are infeſted by this malady; for which reaſon Aurelian [x] concludes, that the diſeaſe took its name from the part of the body which it principally invades. This obſervation is the more neceſſary to be remembered, becauſe the leſs ſkilful imagine there is no pleuriſy if there be no pain in the ſide: and the common people even fancy that the left ſide only is obnoxious to the malady; whence they frequently neglect the diſtemper, to the utmoſt danger of the patient, when the pain lies in the right ſide. But, upon the whole, in reviewing the numerous hiſtories which I have collected of pleuriſies, I find the right ſide to have been of-

[x] Acut. Morbor. lib. ii. cap. 13. p. 110.

tener affected than the left: and the learned Triller [y] has made the ſame remark; and alſo aſſures us, that he has obſerved the pleuriſy to be of a more favourable diſpoſition when ſeated in the right ſide; but that it has proved more dangerous, ſtubborn, or inveterate, when fixed in the left ſide. Aretæus [z] has obſerved to us, that the pain extends throughout the whole continuity of the pleura, and that it ſometimes reaches the back and ſhoulders; and then it was by the ancients called a *dorſal* Pleuriſy, as appears from an ingenious correction made in the reading of this obſcure paſſage by Petite [a]. Hippocrates [b] has made mention of a pleuriſy in the back; but ſome particulars appear in that place which ſeem to ſhew the text is ſome way vitiated. Obſervations alſo inform us that this malady has taken up its reſidence under the ſternum itſelf, as Schenck [c] relates out of Peter Salius's treatiſe concerning the cure of diſeaſes not expounded by common practitioners; for in the body of a man deceaſed on the ninth day of the diſeaſe, contrary to the expectations of his phyſicians, an inflammatory tumour of a conſiderable magnitude was found in the mediaſtinal membranes, which even in part extended to the pericardium. In theſe caſes the patients had all the appearances of a ſharp pleuriſy; but inſtead of a pain in the ſide, they had a troubleſome uneaſineſs felt under the ſternum, with a ſenſe of great heat or burning in the thorax. But it is evident enough, that the pain of the inflamed parts in theſe maladies, muſt be ſo much the ſharper, as the membranes are more ſtretched, or agitated, at the time of inſpiration; whence it follows, that a pleuriſy may be attended with divers degrees of ſeverity in the pain, according as the diſeaſe lies either in one part or the other of the thorax.

§. 878. NOW when the membrane itſelf, which ſurrounds the ribs internally, becomes

y De Pleuritide, p. 4. cap. 10. p. 8. cap. 15. p. 590.
z De Cauſis et Signis Morb. Acut. lib. i.
a Ibidem. p. 152.
b De Morbis, lib. iii.
c Lib. ii. p. 289.

becomes the ſeat of this pain, or even the continuous parts of the internal intercoſtal muſcles, it is called a *True* Pleuriſy; but if it lies more ſuperficially, within the intercoſtal muſcles, more eſpecially the external ones, or if it affects the parts that lie above them, it is then called a *Spurious* or *Baſtard* Pleuriſy.

It has already appeared, that ſome pains of the ſide, which are not accompanied with a fever, have no relation to a pleuriſy, §. 875. But there are ſtill other pains of the ſide obſerved, which have a fever, and which, though they hinder the freedom of reſpiration, are yet not ſo dangerous in their events; and theſe have given birth to the diſtinction of a Pleuriſy into *true* and *ſpurious*. A True Pleuriſy was ſaid to be an inflammation in the pleura itſelf, or in the parts immediately continuous with it; but if the parts above theſe, nearer to the outer integuments, were the ſeat of the phlegmon, it was termed a Baſtard Pleuriſy. The principal difference then betwixt the two kinds of the pleuriſy lies here, That the vital reſpiration is ſo much the more impeded as the malady is ſeated more inwardly; and that a ſuppuration following after ſuch an inflammation, ſeated in the the exterior parts, has rather an outward tendency to diſcharge itſelf; whereas, when the malady is more deeply ſeated, it tends to break into the capacity of the breaſt. Galen has well obſerved this, and mentioned the ſigns by which the two nearly related maladies may be diſtinguiſhed one from the other; for after having treated of a pleuriſy, he goes on thus: *But there are other pains of the ſides joined with fevers, which neceſſarily occaſion the breathing to be quick and ſmall: but there is no expectoration in theſe, ſo that the want of a ſpitting gives them the reſemblance of pleuriſies; from which however they are eaſily diſcernable, as well becauſe they have no cough, while pleuriſies without a ſpitting have a dry cough, as becauſe they have no tightneſs and hardneſs of the pulſe, the fever is leſs acute, and the diffi-*

culty of breathing not so oppressive: some of them also are painful, if we press outwardly upon the parts inflamed. In these again there is no salutary discharge by spitting, because from the beginniug none of the humour that excites the inflammation flows to the cavity of the breast; but when the inflammation is arrived to a state of maturity, if the matter be not first absorbed or dispersed, it points up to the skin, and may be let out by incision [c]. A passage of the same import is also given us by Ægineta [d]. But it seems very difficult to be able to discern whether the inflammation occupies only the outer or the inner intercostal muscles, since they lie close one upon the other, and have a like action; therefore the distinction betwixt a *true* and *bastard* pleurisy which is derived from hence will be much more obscure, while that will be much more evident which may be had from the passage last cited from Galen.

It is also to be remarked, that sometimes both the intercostal spaces, and all the parts incumbent upon them, are inflamed at the same time; and this case, however rare, I have sometimes seen: but, as denominations are taken from that which is most considerable, or significant, such a disease, it seems, ought rather to be referred to the *true* than the *bastard* species of the pleurisy.

§. 879. A PLEURISY seizes chiefly those who have done growing, who are of a sanguine complexion, who make free with vinous or fermented drinks or with high foods, who are given

[c] Sunt vero alii laterum dolores cum febribus, per quos necessaria densa et parva respiratio fit: nihil autem exspuitur, ut ideo sputi expertibus pleuritidibus similes fiant; verum facile ab illis discernuntur; tum quod nulla sit tussis, cum sputi expertes (pleuritides) siccam tussim habeant; tum quod neque tensionem neque duritiem ullam referat pulsus, neque adeo acuta febre laborent, et respirationis difficultas minus illos molestet: nonnulli etiam, prementibus nobis extrinsecus locum inflammatum, dolent. Illis repurgatio non fit per sputa, quia ab initio nihil (humoris) inflammationem excitantis ad thoracis spatium pervenit. Concocta vero inflammatione, nisi pus prius discutiatur, ad cutim attollitur, et secatur. *De Locis Affectis, lib.* v. *cap.* 3. *Charter. Tom. VII. p.* 488.

[d] Lib. iii. cap. 33. p. 40. versa.

given much to robuſt exerciſes, or are ſeldom troubled with acid belchings, but eaſily fall into inflammatory diſtempers: It alſo principally invades in the ſpring ſeaſon, more eſpecially when the weather ſuddenly comes in very hot, after a ſharp froſt has preceded; or it may invade in the winter, after a ſharp cold wind. And under theſe circumſtances the diſtemper is called *idiopathic*, or original.

Obſervations have taught us, that every age, and conſtitution, is not equally obnoxious to this malady; and that even the different ſeaſons of the year, and changes of the weather, deſerve a ſhare in theſe conſiderations, concerning which we are now to treat.

A pleuriſy is a diſeaſe of the inflammatory kind, and therefore moſt to be feared in thoſe who have a natural tendency to ſuch diſtempers: ſuch a tendency have thoſe perſons (mentioned before on another account at §. 772.) whoſe veſſels are ſtrong and cloſe contracted, and their juices denſe, acrid, and ſwiftly moving. The pulſe in theſe perſons is uſually larger and quicker than in others; their habit of body thin or ſlender, active, hot, and ſtrong. Hence it rather invades ſuch as are adult or full-grown, than thoſe of younger years, in whom the ſolids are found of a looſe fabric, and the fluids leſs denſe or compacted: for which reaſon Hippocrates (ſee comment to §. 874.) has pronounced, that a pleuriſy and peripneumony invade not before the age of puberty; however, as a rarity, the diſtemper does ſometimes ſeize upon thoſe of younger years. On the ſame account Aurelian[e] has remarked, that males have this malady more frequently than females: but Triller[f] aſſures us, that it affects women in a worſe degree than men, though it does not ſo often lay hold of them; for it ſeems the cauſes muſt be very violent that are able to excite a pleuriſy in women, who are naturally of a habit leſs prone to the diſtemper than men. But Hippocrates has told us,

That

[e] Acutor. Morbor. lib. ii. cap. 13. p. 111. [f] De Pleuritide, p. 4.

That *thoſe are in leſs dauger in diſeaſes, who are by their nature, age, habit, and the ſeaſon of the year, more familiar with them, than thoſe who are not ſo*[g]. And Galen[h] in his comment upon that text very well remarks, that the greatneſs of the danger does then not depend upon the conſtitutional habit of the patient, but upon the violence of the cauſes which produce the diſeaſe. Theſe paſſages may be eaſily reconciled by thoſe mentioned at §. 874. where it was ſaid that a peripneumony rarely happens to women, children, and men of a lax habit; and that in ſuch it is eaſily cured, almoſt of its own accord, becauſe the natural diſpoſitions of the fluids and ſolids of ſuch perſons leſs favour the diſeaſe: but if, notwithſtanding, the violence of the remoter cauſes ſhall be ſufficient to excite a violent pleuriſy in thoſe undiſpoſed perſons, it is not impoſſible but the malady may ſometimes be dangerous, and it will be ſtill worſe if the patient is ſtrong and much exerciſed; and it may in ſuch ariſe even from a ſlighter cauſe.

Sydenham[i] has obſerved to us, "that this diſeaſe "attacks chiefly thoſe of a ſanguine temperament, "and oftener huſbandmen, farmers, or thoſe who are "generally fatigued with much labour." But that this malady proves moſt pernicious to thoſe habits, and to exerciſed or labouring perſons, is an ancient admonition of Hippocrates[k], which we mentioned before upon another occaſion. The learned Triller[l] alſo remarks, that he has oftener met with this malady in dry, lean perſons, than in thoſe who were fat and moiſt; for in the former both the veſſels are more rigid, and the humours are obſerved much denſer. For this reaſon Aretæus[m] ſeems to have believed, that old people are more eſpecially obnoxious to pleuriſies; but that they oftener eſcape, becauſe a phlegmon is rarely excited to any violent degree in old age: On the con-

[g] In morbis minus periclitantur, quorum naturæ, ætati, habitui, et anni tempeſtati morbus magis familiaris fuerit, quam quibus in horum aliquo non familiaris ſit. *Aphor.* 34. *ſect.* ii. *Charter. Tom. IX. p.* 75.

[h] Ibid. p. 76. [i] Sect. vi. cap. 111. p. 331. [k] Coac. Prænot. nº 398. Charter. Tom. VIII. p. 875. [l] De Pleuritide, p. 3.

[m] De Cauſis et Signis Morbor. Acutor. lib. i. cap. 10. p. 9.

contrary, he ſays of young perſons, and thoſe who are in the prime of their age, that they are ſeldomer afflicted with this malady; but then they as ſeldom recover from it, becauſe the pleuriſy uſually rages in them with ſo much more violence. That a firm ſtrong habit of the ſolids encourages this malady, may be alſo concluded from the words of Hippocrates [n], in his book upon Air, Water, and Situations: For he remarks, that people who dwell in cities expoſed to the north have their bodies drier and ſtronger; but then they live more obnoxious to pleuriſies: On the contrary, thoſe who live in cities expoſed to the ſouthern winds, have generally their bodies more weak or lax (ατονωτερα); but then they are ſeldom ſeized with pleuriſies [o].

As for meats and drinks, acrid or high reliſhed in their own nature, or only taken to exceſs in quantity, we have already ſeen how they may excite fevers, in our comments before upon §. 586.; and therefore it is evident, thoſe who eat and drink richly, if they are at the ſame time by age and conſtitution naturally prone to feveriſh diſeaſes, may very eaſily fall into a pleuriſy. Hence it is that Hippocrates [p] reckons exceſſive drinking of wine as one cauſe of a pleuriſy. But an abuſe of fermented or vinous ſpirits is ſtill much worſe; as by theſe the albuminous juices are curdled or coagulated, and the ſolid fibres become wrinkled or ſhrunk up: and therefore, as Triller [q] juſtly obſerves, "Pleuriſies happen to none more "frequently, or more ſeverely, than to ſuch as have "made it the cuſtom of their life to drink much of "ſpirituous liquors, more eſpecially of brandy, or the "like." I have myſelf often ſeen pleuriſies fatal on the third or fourth day in ſottiſh perſons.

Such as ſeldom have four belchings.] Hippocrates in his aphoriſms informs us, That *thoſe who have four belchings are ſeldom troubled with a pleuriſy* [r]. When we treated of ſpontaneous diſeaſes from acidities, we ſhewed,

[n] Charter. Tom. VI. p. 191. Ibid. p. 190. [p] De Morbis, lib. i. cap 2. Charter. Tom. VII. p. 546. [q] De Pleuritide, p. 4.

[r] Qui acidum eructant, rara pleuritici fiunt. *Sect.* vi. nº 33. *Charter. Tom. IX. p. 269.*

ſhewed, that a ſcarcity of good blood, and a weakneſs of the fibres, veſſels, and viſcera, with a neglect of animal motion or exerciſe (ſee §. 61.) are deſervedly reckoned among the cauſes of acid acrimony. But from what has been ſaid it is plain, ſuch bodies are the leaſt diſpoſed to inflammatory diſeaſes; and thence the reaſon of this aphoriſm is evident. But after Helmont[s] had laid it down, that an hoſtile acid fixed itſelf like a thorn into the pleura, to cauſe a pleuriſy, phyſicians gave a very different interpretation to this aphoriſm, ſuch as ſuited with their favourite opinion; for they imagined the malady oftener afflicted thoſe who had *ſeldom* any ſour belchings, becauſe that, being retained within the body in mixture with the blood, laid the baſis of this diſeaſe: but the vanity of this notion appears plainly enough, as well from the cauſes of a pleuriſy, which we ſhall hereafter recount, as from the whole hiſtory of the diſeaſe itſelf.

Eaſily falling into inflammatory diſtempers.] What kind of propenſities to feveriſh diſtempers theſe are, we have already declared, a little before, under the preſent aphoriſm; but ſuch an inclination of the body is known from the conſtitution, and the paſt diſeaſes.

In the ſpring ſeaſon, *&c.*] A pleuriſy may indeed ariſe from the cauſes following, in all ſeaſons of the year: but whenever the diſtemper rages epidemically, it is chiefly in the ſpring quarter, more eſpecially at that turn of the ſeaſons, which, being only a ſmall portion of the year, ſerves as a link to chain the ſpring and ſummer together, as Sydenham[t] informs us: the truth of which I have found confirmed from my own obſervations of the epidemical ſeaſons.

In the winter, after a ſharp cold wind.] That the particles of the blood congeal by cold ſo as to be a cauſe forming obſtructions in the leaſt arteries, hath been demonſtrated before at §. 117. If then a continued and ſevere cold wind is driven into the lungs, which lie contiguous to the pleura, and at the ſame time ſweeps over the whole body, the coſtal intervals will in

[s] In Capitulo *Pleura furens*, nº 13. p. 319.

[t] Sect. v. cap. 5. et ſect. vi. cap. 3. p. 306, 330.

in that caſe be expoſed, both without and within, to ſevere cold. But again, uncautious perſons will be ſtill more liable to a pleuriſy, if they go into ſuch a cold air ſuddenly, from the bagnio, or other warm place, not ſufficiently defended with clothing; the reaſon of which we have given at §. 118.

For theſe reaſons Hippocrates [u] pronounces, that pleuriſies and peripneumonies happen the moſt frequently and ſeverely in winter-time; and Aretæus [w] gives us the like intelligence.

Under theſe circumſtances it is called *idiopathic, &c.*] Namely, when the cauſe of the pleuriſy has reſided in the coſtal ſpaces from the firſt attack of the diſeaſe; and was not firſt formed in ſome other part of the body, and afterwards tranſlated thence to the ſide: for *idiopathy* (ιδιοπαθεια) denotes the original or primitive malady.

§. 880. BUT a pleuriſy is ſaid to have ariſen *ſymptomatically*, when it ſprings from the matter of ſome other inflammatory diſtemper, put into motion, and tranſlated upon the parts deſcribed at §. 877 and 878.

Sometimes a pleuriſy ſucceeds after other maladies have afflicted the patient, and then it is called *ſymptomatical*: for thus, on another occaſion §. 752, we remarked, that a quartan improperly treated with hot medicines, in the ſpring-time, turned into a ſevere pleuriſy. Alſo Sydenham [x] in like manner informs us of pleuriſies incidental, which come ſymptomatically after other fevers, of all kinds and denominations: but he remarks they are principally occaſioned by an abuſe of hot medicines in the beginning of the diſtemper; more eſpecially if the patient's age, conſtitution, and the ſeaſon of the year (betwixt ſpring and ſummer,) conſpired to heighten the diſeaſe.

This diſtinction of a pleuriſy into *original* and *ſymptomatical*,

[u] De affectionibus, cap. 3. Charter. Tom. VII. p. 621. [w] De Cauſis et Signis Morbor. Acutor. lib. i. cap. 10. p. 9. [x] Sect. vi. cap. 3. p. 332.

tomatical, is of very conſiderable uſe towards the cure. For if it be the primitive diſtemper, it generally requires copious and repeated blood-letting: but if the pleuriſy be ſymptomatical, or conſequent of ſome other epidemical diſeaſe, which will not bear veneſection, at leaſt to be repeated; in that caſe blood is to be drawn much more ſparingly than is otherwiſe cuſtomary. This is what Sydenham [y] found out by a diligent and repeated attention to theſe diſeaſes; who alſo propoſed it to others as a matter of the laſt conſequence in practice.

§. 881. A PLEURISY has for its cauſe, 1. Every thing that is diſpoſed to generate an inflammation of another kind (§. 375, to 380.) 2. Whatever determines the ſaid general cauſes to act chiefly upon the pleura: To which more eſpecially belong, The patient's habit of body, having the intercoſtal arteries narrower or harder than uſual; ſome diſeaſe antecedent that leaves a propenſity to this malady, ſuch as a ſchirrhus or callus of the pleura, an adheſion of it to the lungs, *&c.*: to which add, the nature of the prevailing epidemical diſtemper; a cold air ruſhing violently through narrow chinks upon the naked body, which before was greatly heated by exerciſe or by fire; the ſudden drinking of very cold liquors in large draughts, when the body is in like circumſtances; a very cold or freezing north-wind in the winter. 3. Any tranſlation of an inflammatory matter, whether ichorous or purulent, that was before predominant in the whole habit, or in ſome certain part, from whence by any cauſe it becomes removed and ſettled to the ſide; as in the meaſles; ſmall-pox; vomicas, or ulcerous ſwellings; large wounds or ulcers, of a conſider-

[y] Sect. v. cap. 5. p. 310.

conſiderable extent, and ſuddenly cloſed, the matter being drank up by the veins.

I. We come now to ſpeak of the cauſes of a pleuriſy. This diſorder being, as we have already ſhewn, an inflammatory diſeaſe, (which will alſo appear thro' our whole treatiſe of the diſtemper, and from the various events of it to be hereafter deſcribed), we may therefore refer to its cauſes all thoſe that are able to produce other inflammations, of which we treated at the numbers here cited.

II. Now although there may be an inflammatory diſpoſition already in the blood; yet another cauſe is required to fix the diſorder rather upon the intercoſtal ſpaces of the ſide than elſewhere. To this may be referred,

The patient's habit of body, *&c.*] Anatomiſts teach us, that there is great variety, as to the ſize and number of the ſame blood-veſſels in different bodies; and that ſometimes the arteries are found callous, cartilaginous, or even bony. Diſorders of the like kind may therefore happen in the coſtal arteries, ſo as to hinder the free motion of the blood through them. However, it ſeems probable that ſuch hindrances very rarely happen in theſe veſſels; ſince the indurations of the arteries have been commonly found only in the larger trunks, and in thoſe of a decrepid age.

Diſeaſe antecedent, *&c.*] That a ſchirrhous hardneſs often remains after violent inflammations, more eſpecially in ſuch parts as are of a glandular fabric, has been ſhewn before in our Hiſtory of Inflammation at §. 392. We alſo remarked, intreating of a Schirrhus at §. 485, what wonderful indurations have ſometimes been obſerved in membranous parts of bodies that have been opened. And at §. 843, it appeared, that the lungs do by inflammation often grow to the contiguous pleura; it will therefore be no wonder if the ſame adheſion follows from an inflammation in the pleura, as the diſſections of thoſe who have deceaſed of pleuriſies inform us [z]. But that ſuch callous and ſchirrhous indurations, as well as concretions of the other-

[z] Triller. de Pleuritide, p. 6.

wiſe ſoft and lax parts, may be the cauſe of obſtruction and inflammation, has been already proved at §. 112, no 1. And from hence it is, that thoſe who have had a ſevere pleuriſy, are often troubled with pains of the breaſt at times, during the remains of their life, upon any ſudden change of air, violent paſſions of mind, or hard drinking, *&c.*; and this more eſpecially when they have been afflicted more than once by the pleuriſy. Accordingly Schenck [a] relates to us out of Braſſavolus, that Alphonſus duke of Ferrara, being thrice afflicted and cured of a pleuriſy, remained afterwards liable to a pain in the ſame place, upon every ſlight occaſion.

But Diemerbroeck [k] remarks, that in the courſe of his practice he obſerved, that thoſe who had ſigns of the lungs cohering with the pleura, fell oftener and eaſier into pleuriſies than others: and experiences have taught phyſicians, that thoſe who have had a pleuriſy once, are more eaſily invaded by it a ſecond time.

The nature of the epidemical diſtemper prevailing.] Although pleuriſies often take their origin from evident cauſes, ſuch as from a cold wind upon the body after violent exerciſe, *&c.* yet the moſt truſty obſervations have taught us, that there are alſo ſometimes pleuriſies which afflict moſt people who inhabit one place, at the ſame time, although there is no apparent cauſe known to which the origin of the diſeaſe can be aſcribed. It is indeed true, that its afflicting many perſons in common, and other circumſtances (which we ſhall conſider hereafter at §. 1404.) perſuade us that the latent cauſe thereof reſides in the air: but in the mean time nobody will pretend to determine the nature of that particular morbid quality which occaſions the ſpreading diſeaſe among the people; becauſe there appears no ſenſible change in the qualities of the air, to which ſuch an affect can be juſtly attributed. It did not without reaſon appear wonderful to Sydenham, that ſuch epidemical fevers would ſometimes afflict the head, at other times the ſtomach and inteſtines, at other ſeaſons rather infect the pleura or lungs: but ſtill

[a] J. Schenckii Obſerv. Med. Rar. lib. ii. p. 245. [b] Anat. lib. ii. cap. 13. p. 308.

ſtill he obſerved, what in practice muſt be of the laſt importance, that by ſenſible changes in the known qualities of the air, the epidemical conſtitution would ſometimes change from its firſt diſpoſition, and receive a tendency to affect other parts of the body. Thus when a fever raged epidemically, which affected the head, it happened that in the whole month of October an unuſual warmth of the air ſucceeded, which was ſuddenly followed with a cold and wet ſeaſon; from thence followed coughs, which afflicted whole families. Now theſe coughs paved the way to an epidemical fever; but ſo that when the fever was once formed after the cough, it infeſted the lungs and pleura rather than the head; and yet towards the cure, the ſame treatment was required as had before been uſed when it invaded the head [c]. It is therefore evident, that the epidemical conſtitution ought to be attended to as a cauſe in pleuriſies.

Cold air, *&c.*] When perſons are much heated by violent exerciſe, or even by the external influence of a great fire, we ſee the whole ſkin appears very red, which is an evident ſign that the red blood then enters many of the ſmaller veſſels from which it naturally ought to be excluded while the body is at reſt or in an air that is not exceſſively hot; therefore in this caſe happens an error of place, or an erroneous ſtraying of the red blood, (ſee §. 118.) If now thoſe veſſels are ſuddenly conſtringed by a cold air, and the parts of the blood more thickened or united into larger moleculæ, thoſe groſs or ſluggiſh juices, which were driven into the extremities of the leaſt veſſels, will there ſtick faſt, and form obſtructions, inflammations, and their conſequences. All practitioners have obſerved frequent pleuriſies to ariſe from this cauſe; no leſs than gouts and rheumatiſms which have been very difficult of cure.

But a cold air is of all the moſt miſchievous when it blows violently upon the naked body, through ſome chink or ſmall aperture, whereby its action and cold are rendered ſo much greater upon the body. It is true indeed, that the wind blown ſwiftly from a pair

[c] Sydenh. ſect. v. cap. 5. p. 305.

of bellows upon the ball of a thermometer, however moveable it may be, does yet not manifeſt any effect by cauſing the liquor to deſcend: but by the motion of ſuch a wind upon our body, the ſhell or atmoſphere of warm air and vapours that ſurround us is ſwept away, and a cold air is applied in the room of it every moment; and from hence the ſenſe and effects of cold will be increaſed. Hence it is that ſo many farmers, ruſtics, porters, and others accuſtomed to hard labour, periſh of theſe diſtempers; becauſe when heated by labour they reſt idle, with the body almoſt naked, to take the cold of the air which ſeems to them ſo agreeable. Sydenham [d] even judged that more perſons periſh by this cauſe than by the plague, ſword, and famine put together.

Cold liquors drank ſuddenly in large draughts, *&c.*] There is even ſtill more danger from this cauſe than from a cold air; and indeed I never obſerved pleuriſies more ſevere, or ſuddenly fatal, than from ſudden and exceſſive drinking of cold liquors, when the body has been much heated. The drinking of icy cold lemonade, in a noble youth, who had heated himſelf at tennis or ſome other play of the ball, excited, within the ſpace of three hours time, a pleuriſy that was fatal. Diemerbroeck [e] obſerved, that a hay-maker, by drinking plenty of cold beer while he was in a violent ſweat, by hard labour, in the midſt of ſummer, immediately contracted a pleuriſy that was in a few days fatal. The examples of this kind, which occur in practical writers, confirming the ſame thing, are innumerable. The reaſon is evident; for the blood of a healthy perſon, drawn from a vein into cold water, inſtantly concretes into threads of almoſt a ſolid conſiſtence. Now when plenty of cold drink is ſwallowed through the œſophagus, which deſcends in its courſe very near the trunks of the intercoſtal arteries, it is therewith filled or diſtended; and in like manner the whole ſtomach being alſo diſtended with the cold drink, inſtantly imparts the unuſual coldneſs thereof to the adjacent diaphragm, liver, ſpleen, *&c.* The trunk of the

[d] Sect. vi. cap. 1. p. 325. [e] Anat. lib. ii. cap. 13. p. 309.

the aſcending cava, and the large right ſinus of the heart, incumbent on the thin tendinous part of the diaphragm, are affected in the like manner, by diſpoſing the blood there collected towards a concretion, that will impede the paſſage which it ought ſoon after to have very ſuddenly through the lungs. It is no wonder therefore if a fatal pleuriſy or peripneumony ſo frequently and ſuddenly ariſe from this cauſe, any more than that inflammatory diſorders of the like kind ſhould from thence invade the other viſcera that lie contiguous to the ſtomach: but here the danger is increaſed; becauſe, a ſweat being raiſed by violent exerciſe of body, the thinner parts of the blood are thrown off by vapour; while cold water, or the like denſe liquors, are not ſo readily heated as air, by the natural warmth of our body. For the celebrated Boerhaave [f] has demonſtrated, that a body heats ſooner from the ſame degree of fire in proportion as it is rarer or leſs denſe.

From what has been ſaid, then, it appears, that Lanciſi [g] has very juſtly pronounced, that an incautious uſe of the cold bath, or cold drinks, when the body is heated, ought to be ranked among the cauſes of ſudden deaths.

A cold freezing north-wind, in the winter-time.] Concerning this cauſe of a pleuriſy we treated before at §. 879.

III. We obſerved a little before, that a pleuriſy is diſtinguiſhed into *original*, and *ſymptomatic* or ſecondary; but what we have advanced under the two preceding numbers or aphoriſms, relate to the cauſes of an *original* pleuriſy; we are therefore now to treat of the cauſes of a *ſymptomatical* or incidental pleuriſy. All diſeaſes which change from their firſt nature by degenerating to another kind, are ſaid to be made (εκ της μεταπτωσεως) by a *tranſlation* [h]. Thus, for example, there is often an inflammatory diſpoſition introduced throughout the blood in continual fevers; and from thence afterwards the reſpiration becomes difficult, quick, or ſhort, and

[h] Chem. Tom. I. p. 201. [g] De ſubitaneis mortibus, lib. i. cap. 7. p. 12. [f] Gorræi definit. medic. p. 397.

painful about the vitals, (see §. 734.) Sometimes, again, the phlogistic matter will remove from the part upon which it first settled, and take up its residence upon the intercostal spaces: thus a pain of the breast will frequently terminate in a frenzy, as we formerly observed in another place, §. 779.

Thus pleurisies of a very bad kind happen to child-bed women from a retention of the lochia, as we shall hereafter declare at §. 1329. Nor is a pleurisy in these only the result of a suppression in the flux of the red or sanguine purgations merely; but also of the more palid and ichorous discharges that second them: whence Hippocrates observes, That *those who after the birth have a retention of the lochial or white purgations, with a fever, deafness, and sharp pain of the side, become perniciously delirious* [i].

Thus, in the small-pox, Sydenham [k] has observed, that although the confluent sort hardly ever stay till after the fourth day, but commonly break out sooner; yet that sometimes a very sharp pain invades either in the loins or in the side, resembling that which attends a pleurisy, whereupon the small-pox are later in their eruption; because, as it would seem, the matter of the disease, that should tend to the surface of the body, is arrested in other more interior parts; but that such symptoms more especially happen when those small-pox are treated with too hot a regimen. The same thing also happens in the measles; only there is then a dangerous peripneumony instead of a pleurisy, as Sydenham hath in divers places shewn to us: But how many, and how different maladies may arise from a resorption of the matter into the blood, has been already declared in treating of Abscess at §. 406.

§. 882. THE preceding history of a pleurisy (§. 875, to 882.) and the course of it hereafter to be explained (§. 883, to §. 907.) to-

i Quibus ex partu alba purgamenta retinentur cum febre, surditas et acutus lateris dolor, pernicioſe insaniunt. *Prædict. lib.* i. nº 28. *Charter. Tom. VIII. p.* 751.

k Sect. iii. cap. ii. p. 166.

together with the diſſections of bodies deceaſed thereof, plainly teach us, that it is an inflammation ſanguineous or phlegmonic (§. 371.) ſeated in the parts deſcribed at §. 877, 878. and ariſing generally from an acute fever preceding.

Concerning the parts affected in this malady, we diſcourſed at large in the comment to §. 877. where we likewiſe mentioned the obſervations taken from bodies deceaſed of a pleuriſy, which prove that a true inflammation was ſeated in the parts mentioned §. 877, and 878. It will alſo be evident from the progreſs of the diſeaſe following, that it may have all the terminations of a phlegmon, either by reſolution, abſcefs, gangrene, or ſchirrhus: but an acute fever almoſt conſtantly precedes a pleuriſy, at leaſt for ſome hours; although we may in a manner except from hence that caſe in which a pleuriſy ariſes of a ſudden from cold drinks taken by perſons hot with exerciſe, or from a cold air violently blown upon the body.

§. 883. FROM the above mentioned ſources (§. 881, to 882.) the hiſtory of this malady is plainly derived. For it frequently begins with a great appetite to food, with a coldneſs, ſhuddering, weakneſs, wearineſs, and a fever, which is preceded by a heat that inſenſibly riſes to a degree of burning, with thirſt, and a total loſs of the appetite; the pain in the mean time advances, from being mild or tolerable, to the greateſt ſeverity, by which the reſpiration becomes greatly injured: at length it rages, with a violent fever, that appears indeed leſs evidently from the confined or ſuffocated reſpiration, which the patient ſtifles, to avoid the ſevere ſenſe of pain; from which circumſtance the phyſician is often ſadly miſtaken or deceived in the appearance: after this it terminates variouſly in event, according

according to the number of the cauſes, and more eſpecially the different changes of inflammation before noticed (§. 386, to 393. and 492, to 500.) together with the nature of the part itſelf in which the malady is ſeated (§. 877, 878.) having a regard to the circumſtances of each of theſe particulars: but the conjunct ſymptoms are all of them worſe, as there are a greater number of the parts (§. 877, 878.) affected at once; as the fever, or circulation of the blood and juices, is more violently increaſed (§. 92, to 102.); or as the firſt onſet of the diſeaſe itſelf was more malignant, (§. 564, 567.); but more eſpecially as the breathing and pulſe, with the excretions, appear to be more vitiated and diſtant from their natural ſtates or conditions.

We come now to the deſcription of a pleuriſy as taken from its appearances, which are remarkable either a little before the invaſion of the malady, or while it is yet forming, and afterwards through the courſe of the diſtemper. But a knowledge of theſe appearances all together, form the diagnoſis of this diſtemper. Theſe our celebrated author has collected from his own obſervation; and they are alſo to be found under a like deſcription by Sydenham[1]. It is ſometimes preceded with an extraordinary appetite; which occaſions ſome wonder at a ſharper hunger than uſual, while as yet nothing of the malady is perceived; but ſoon after, the patient begins to grow chilled and weak, while all the other ſymptoms advance which uſually accompany the beginning of a fever; but as yet there is no apparent ſign of a pleuriſy. However, a pain ſoon after invades one ſide or the other, ſometimes the back, or the fore part of the breaſt, and all thoſe ſpaces which were recounted at §. 877: yet the period of time is uncertain when the ſaid pain follows the forementioned ſymptoms; for it happens ſometimes

[1] Sect. vi. cap. 3. p. 330.

times ſooner, ſometimes later. I have ſometimes remarked the pain to be ſharp enough within the firſt hour: while again, in the vernal pleuriſies of the year 1729, the pain came upon the ſecond day of the diſeaſe; and although it proved not very ſevere, all that were ſeized therewith were in great danger. That thick or turbid urine, which we formerly compared to the ſtale of cattle (ſee §. 734.) attended here from the beginning of the diſeaſe; then the pulſe became unſettled or wavering; and ſoon after followed a delirium, a ratling in the throat or breaſt, and then death. Now although the pain, when it is conſiderably ſharp, denotes great danger, and demands ſpeedy relief; yet we are not to be over confident, although there may be but little pain urging in the beginning of the malady: for thus I ſaw a pleuritic man who had only a ſlight pain on the firſt day of the diſeaſe; and yet he periſhed on the fourth day, with all the ſigns of a formed gangrene, although powerful and ready helps were given him. Hippocrates alſo ſeems to have obſerved pleuriſies of the ſame ſort, and equally dangerous, where he tells us, *But if through the beginning or firſt ſtages of the malady the pains are moderate, but acute after the fifth or ſixth day; ſuch pleuriſies commonly terminate by the twelfth day, and the patients do not very often eſcape: but the time of their greateſt danger extends to the ſeventh, and to the twelfth day; but after thoſe times, they recover: But thoſe pleuriſies which have their pains mild in the beginning, and ſevere after the ſeventh or eighth day, come to a criſis upon the fourteenth day, and are cured* [m]. The like we have in his Coan Præſages [n].

But when this pain has once invaded, the breathing is greatly injured; for at the time of the inſpiration the ribs muſt of neceſſity be drawn aſunder one from the

[m] Quod ſi per initia molles quidam detinuerint dolores, poſt quintum vero et ſextum diem acuti, illae ad duodecimum (diem) finiuntur, et non admodum effugiunt: periculum autem maximum eſt uſque ad ſeptimum (diem) imo ad duodecimum: poſt hos autem ſanantur. Quae vero ab initio quidem molles ſunt, poſt ſeptimum autem et octavum acutae; ad decimum quartum diem decernunt, et ſanantur. *De Morbis, lib.* iii. *cap.* 15. *Charter. Tom. VII. p.* 590.

[n] N° 387. Charter. Tom. VIII. p. 873.

the other, and by this the inflamed parts will be ſtretched or extended ſo as greatly to increaſe the pain. Upon this account ſuch miſerable patients hardly breathe air ſufficient to dilate the lungs, whereby the right ventricle of the heart becomes unable to empty itſelf with due freedom. The blood therefore returning from the head by the jugular veins, cannot now find any admittance into the right ſinus and auricle already full: whence, the internal parts of the encephalon being compreſſed by the turgid veſſels, the patient becomes dull, ſtupid, and leſs ſenſible of the pain; and the repletion of the lungs gradually increaſing, he ſoon expires ſuffocated; while the unſkilful, hearing no more complaints, miſtakenly imagine that the diſeaſe is rather better. The pulſe, which was before quick, full, and hard, now begins to grow ſoft and ſmall: and ſometimes it beats ſlower, but not often ſo; for generally this kind of pulſe beats quick, as it is weak. See what has been ſaid at §. 807, where we treated more particularly of the conſequences which follow an impeded dilatation of the lungs by inſpiration in an inflammatory quinſy: for it muſt be remarked that pleuritic patients periſh in the height of the diſtemper, not from the inflammation of the pleura, or of the parts incumbent on the ribs; but are ſuffocated by a repletion or oppilation of the lungs, for want of a free reſpiration.

Afterwards it terminates variouſly, *&c.*] All that we have advanced concerning the different terminations of a phlegmon at the numbers cited in this place, are equally true of a pleuriſy; and we ſhall preſently ſee in what manner it requires a variation or difference in its treatment towards a cure, according as the event will be either a kind reſolution of the inflammation, a ſuppuration, or a gangrene, *&c.*

But the nature of the part itſelf, in which the pleuriſy is ſeated, deſerves to be conſidered: for if only the outward incumbent parts upon the breaſt are affected, the danger is leſs, and there is more reaſon to expect an outward diſcharge for the matter, if a ſuppuration enſues; whereas the contrary may be expected,

when

when the diſorder is more deeply ſeated. Add to this, that the greateſt danger of a pleuriſy lies here, that from the ſeverity of the pain the freedom of inſpiration is ſuppreſſed of impeded. But it is demonſtrated from o phyſiology, that the firſt rib being fixed or held firm by the ſubclavian muſcle, the nine following are drawn upward at the time or inſpiration, and turned in ſome meaſure more outward; but in ſuch a manner that their motion appears more evidently in the middle of the arches of the ribs than towards the ſternum, or towards the vertebræ. Hence therefore a pleuriſy ſeated in the ſide or intervals of thoſe arches, will, (*cæteris paribus*,) excite the greateſt pain. At the ſame time it is hence evident enough, that a pleuriſy is ſo much the worſe, as it extends into more of the places before enumerated §. 877, 878.

As the fever or circulation is more violently increaſed.] What the maladies are which ariſe from too great a velocity of the circulation of the humours, has been declared at the numbers cited in the text; but alſo, in the hiſtory of Inflammation, §. 386, 387, 388. it was ſaid that a kind reſolution of a phlegmon could never be expected when the motion of the humours through the veſſels was too much accelerated; for in that caſe an abſceſs or a gangrene muſt always be feared: which is therefore true likewiſe of a pleuriſy, in as much as it is an inflammatory diſeaſe.

Or as the onſet or beginning of the diſeaſe itſelf was more malignant.] For we have ſeen that a fever is the conſtant companion of a pleuriſy (§. 875.); and this fever, as we have ſhewn, often holds a conſiderable time before the pain of the ſide is felt. By the beginning of the diſeaſe, therefore, in this place, is underſtood the acute continual fever that often goes before, but always accompanies a true pleuriſy; but this fever is not always alike in different epidemical conſtitutions, as Sydenham hath well obſerved in divers parts of his works; and that particularly in a pleuriſy this is to be diligently remarked [p]. Therefore, according as this fever

o H. Boerh. Inſtit. Medic. ſect. 615.

p Sect. v. cap. 5. p. 304. & ſect. vi. cap. 3. p. 332.

fever injures a greater number of the functions, ſooner exhauſts the vital ſtrength, and is afterwards followed by worſe ſymptoms, ſo much the more dangerous will be the pleuriſy: but concerning thoſe ſigns by which the greater or leſs malignity of an acute continual fever is known, we have treated before at §. 734.

As the breathing and pulſe are more vitiated.] For on theſe depends life; on which account, they are uſually called the *vital actions*. But here we have a diſeaſe which by its own nature is injurious to the breathing; and the degree or magnitude of the diſeaſe is juſtly eſtimated from the greater or leſs impediment which the breathing ſuffers from it. Now for the blood to paſs freely from the veins into the cavities of the heart, and to go from thence through the arteries, requires in man, after the birth, that there be an open or free courſe through the lungs, by which it may go from the right to the left cavities of the heart; which courſe ſuppoſes an alternate expanſion and contraction of the lungs, as neceſſary parts of the vital reſpiration: if therefore the breathing in a pleuriſy ſhall be ſo far impeded as to hinder this free courſe of the blood thro' the lungs, the pulſe will be rendered quick, but ſmall at the ſame time; and when the diſorder is further increaſed, it will begin to intermit, and then death is often ſuddenly at hand. Hence it is that Galen has pronounced: *It is indeed the greateſt ſign of a fatal pleuriſy, for the pulſe to be very hard and ſmall at the ſame time; and from both thoſe cauſes, with a febrile heat, to be likewiſe very quick; for no pleuritic patient eſcapes with ſuch a pulſe* [q].

Alſo the excretions.] Namely, thoſe of urine and ſtool. But here more eſpecially a regard muſt be had to the ſpittings; which inform us much concerning the ſtate or nature of the diſeaſe, whether it will be fatal or ſalutary: But on this we ſhall treat more particularly hereafter at §. 901.

§. 884.

[q] Maximum ſane indicium lethalis pleuritidis eſt, ſi pulſus ſit valde durus, et ſimul parvus, et ob ambo hæc, caloremque, creberrimus: nullus ſervatus eſt pleuriticus cum tali pulſu. *De Præſag. ex pulſibus, lib.* iv. *cap.* 5. *Charter. Tom. VIII. p.* 299, 300.

§. 884. A PLEURISY terminates either in a cure, in other diſeaſes, or in death.

This is a circumſtance which a pleuriſy has in common with all other diſeaſes; and concerning this, we treated at §. 591.

§. 885. IT terminates in a cure, either by the help of *nature;* or by the aſſiſtances of *art*, if applied while the malady is as yet ſimple, or in its beginning.

In §. 587, where we treated upon the effects of a fever, it was proved, that ſometimes the fever itſelf ſubdued or digeſted the impacted or heſitating matter which reſiſted the equability of the circulation through the veſſels. If now the obſtruction in the intercoſtal veſſels be ſo ſlight, and the febrile motion ſo ſedate, as not to drive the heſitating lentor farther into the extremities of the converging veſſels; but, by a ſort of mild attrition or concuſſion only againſt the ſides of the veſſels, reſolves it into its former condition of a fluid; an entire or perfect cure then follows by reſolution, and that often without any aſſiſtance from art. But again, frequently art enables nature to perform that cure happily, which of herſelf ſhe would not have been able to do: For ſince faithful obſervations have taught us thoſe conditions under which the patient remains while the diſeaſe is cured by the conduct of nature only, we know how to uſe our endeavours by art to produce the ſame when they are abſent. Thus, for example, as to ſuch a happy and natural cure there is required but a moderate degree of impetus in the fever; therefore, if the ſame ſhall appear too intenſe, art endeavours by blood-letting and other remedies (§. 610.) to leſſen the exorbitant motion of the fever: But as we obſerve this natural cure ſucceeds moſt eaſily in perſons of a more relaxed habit; therefore art endeavours by foments, liniments, *&c.* ſo to relax the veſſels of the painful ſide, that they may more eaſily yield to a dilatation by the impelled fluids, and there-

by afford the hesitating matter of the arteries a passage through their narrower but thus enlarged extremities into the veins; which is a circumstance required in the benign resolution of an inflammation.

But all physicians who have treated upon this painful malady agree in this, that the cure of it can be expected from *art* only when the most effectual remedies are applied in the beginning or first stage of the disease; for when the pleurisy has continued three or four days before the assistances of art are obtained, it seldom or never is cured by an innocent or mild resolution; but in such cases the violence of the malady usually gives rise to other disorders, which fix themselves in the body, and more especially in the lungs, as will hereafter be made to appear.

§. 886. WITH the help of nature, a pleurisy is cured either by a mild resolution, or by a concoction and excretion, of the matter of the disease.

Either of these two is the method of cure which takes place when the malady is carried off by nature only: for the matter, which stuck imperviously wedged into the ends of the arteries, being resolved into such small portions as it was first composed of before concretion, becomes thereby capable of flowing with the other humours through the vessels; or else it so far relaxes, and alters its consistence, that it may return back from the converging straits of the vessels, but with such condition as will not allow it to be assimilated to the other healthy juices; for which reason it must be thrown out from the body by some excretion in order to the return of perfect health.

See here what has been said relative to this subject in the history of a fever, §. 594.

§. 887. BUT if the proper causes concur, (§. 386, 401.) the pleurisy may terminate by a resolution; and then the kind dis-

position

poſition of the ſymptoms informs us, that nothing remains to be done by art for the relief of the diſtemper, more than the adminiſtering of a thin, light diet, with the mildeſt aperients, and an emollient fotus.

There is (as we before declared at §. 882), an inflammation preſent in every true pleuriſy; and therefore all the requiſites to a reſolution of an inflammation, of which we treated §. 386, are applicable to this place. The attendance of thoſe requiſites is indicated by the kindly diſpoſition of the ſymptoms. For if a patient thus afflicted is of a lax and moiſt conſtitution, while the pain is moderate, without much impeding the reſpiration, and the fever ſlight, without any great hardneſs of the pulſe, or other ſymptom that points out injuries in the other functions, but the excretions remain nearly in their natural conditions; theſe all declare for the cure of a pleuriſy by a mild reſolution. Here then there is no occaſion for blood-letting, at leaſt in any great quantity, ſince there is no exorbitant motion of the fever above what is ſufficient to ſubdue the cauſe of the malady. Nor is it any objection to this, that we formerly obſerved (at §. 883.) pleuriſies to be ſometimes dangerous, when, in the beginning of the malady, there was only a ſlight pain felt: for, in that caſe, there are other concomitant ſigns, which plainly point out the malignant diſpoſition of the diſeaſe; as, the thick urine that forms no ſediment, the fluctuating or unſettled pulſe, the rattling or wheezing in the breaſt, *&c.* which ſhew the greateſt danger.

In the mean time, however, it is requiſite for the phyſician often to viſit the patient in the beginning of ſuch a pleuriſy; and to obſerve with the utmoſt attention, whether the malady keeps to the ſame diſpoſition; or whether the pain or other ſymptoms increaſe, in which caſe another method of cure muſt be followed: for it is a prudent admonition of Galen: "If the patient on "the firſt day of the diſeaſe has the moſt evident ſigns "of health, the malady then terminates within the firſt "four days: but whether it will be by a criſis or reſo-

" lution, is to be judged by the magnitude or ſmallneſs
" of the malady; for violent diſtempers always come
" to a criſis or critical evacuation, but ſmall ones go
" off inſenſibly or by reſolution only [r]."

In theſe moderate circumſtances the beſt remedy is to uſe no medicines at all; but only to keep up the patient's ſtrength with a light thin diet; to ſupply the blood plentifully with diluent attenuant liquors; and to foment the painful parts with the moſt emollient remedies, that the veſſels rendered eaſily dilatable may tranſmit the heſitating matter. Forms for theſe purpoſes may be ſeen in our Author's Materia Medica at the number of the preſent aphoriſm.

§. 888. A PLEURISY is cured by a concoction and excretion of its morbific cauſe when the following ſigns are obſervable. 1. When the piles at a ſeaſonable time make a diſcharge of the proper fluids in a quantity ſufficiently large. 2. When there is plenty of a thick urine, that forms a ſediment, and gives ſome pain in its diſcharge, the hypoſtaſis or bottom appearing reddiſh and mixed with white, diſcharged before the fourth day, and relieving the ſymptoms; which kind of urine has cured the dry pleuriſy. 3. If there is a flux of the bowels, diſcharging plenty of a yellow bilious matter, with relief to the ſymptoms, before the fourth day. 4. If abſceſſes (§. 837 to 843.) break out behind the ears, upon the thighs, or other parts, before the ſixth day; and, turning ichorus, purulent, or fiſtulous, continue making ſuitable diſcharges for a long time after. 5. If the pain of the ſide removes to the ſhoulder, arm, or back, with a numbneſs, pain, and heavineſs in thoſe parts. 6. If there be a ſpitting, free and copious; giving relief; not proceed-

[r] Lib. iii. de Criſibus, cap. 4. Charter. Tom. VIII. p. 433.

proceeding from a defluxion or cold; immediately reſembling matter, but turning whitiſh ſoon, or before the fourth day; holding on, or immediately returning again if ſuppreſſed: for thence the patient recovers by the ninth or eleventh day.

It follows now that we conſider thoſe ways by which a pleuriſy is cured, with the aſſiſtance of nature only, by a concoction and excretion of its cauſe.

1. There are obſervations ſufficiently numerous made upon acute inflammatory diſeaſes, as alſo upon pleuriſies, which teach us, that the material cauſe of the malady may change its place, and take up its reſidence in other parts of the body, oftentimes very ſuddenly. Thus ſometimes I have obſerved ſuch a dangerous tranſlation of the pleuritic matter towards the head, the pain of the ſide then wholly ceaſing; but the head being freed, the pleuriſy has returned to its firſt ſeat. But it ſeems to happen in the ſame manner, that this material cauſe of the diſeaſe, changing its place, does by the help of nature often find of itſelf an exit through the open veſſels of various parts of the body. Thus Aretæus[s], treating on a pleuriſy, having firſt recounted the appearances which happen to the diſeaſe with a bad tendency, ſays, "But if it changes for the "better, there follows an eruption of blood with ſome "violence from the noſe, and then the malady is ſoon "reſolved." In this he is ſupported by Galen, as we remarked before (§. 830, n° 4.) For after having obſerved that a bleeding at the noſe indeed reſolves a frenzy, but that a lethargy and peripneumony ſeldom give way to that diſcharge, he adds: "But among theſe, a pleu-"riſy holds a ſort of middle place; for it is reſolved by "a flux of blood more eaſily than a peripneumony or a "lethargy, tho' leſs ſo than an ardent fever and a fren-"zy[t]." But Triller[u] very well remarks, that by the aſſiſtance of nature pleuritics generally eſcape even without blood-letting, if there does but happen a copious flux of florid or purple blood from the noſe, between

[s] De Cauſis et Signis Morbor. Acut. lib. i. cap. 10. p. 9. [t] De Criſibus, lib. iii. cap. 3. Charter. Tom. VIII. p. 430. [u] De Pleuritide, p. 7.

the firſt and the fifth day. This is what I have ſometimes myſelf obſerved; and I have ſeen an hæmorrhage from the noſe even later give much relief to the diſeaſe, although no perfect reſolution; but ſo that the malady would run afterwards to a great length, and require many other evacutions before it could be cured.

Now the ſame advantages may be juſtly expected from a like diſcharge of blood by the hæmorrhoidal veſſels, as Triller [w] hath alſo remarked. But perhaps this is a diſcharge ſeldom met with; at leaſt of thoſe whom I have attended in pleuriſies, I have not known one to have had a reſolution of the diſeaſe by a flux from the hæmorrhoidal veſſels: yet the ancient phyſicians obſerve that the piles are a preſervative from a pleuriſy, and that from an unſeaſonable ſuppreſſion of them a pleuriſy will very often follow. Thus Hippocrates [x] ſays, That thoſe who have the piles are neither invaded by pleuriſy nor peripneumony, *&c.* Galen [y] alſo teſtifies that he has ſeen many infeſted with a pleuriſy from a ſuppreſſion of the hæmorrhoidal flux. It is therefore not without reaſon that phyſicians of the greateſt note adviſe us to have a regard to this evacuation in the preſent malady.

2. Hippocrates has admoniſhed us, That *in pleuriſies, a pale reddiſh coloured urine, with a light ſediment, denotes a ſure criſis* [z]. But here he ſeems to intend it as a ſign of a good concoction, rather than for the evacuation of the whole matter of the diſeaſe completed. But in the mean time, if ſuch a urine flows plentifully, and forms generally ſuch a ſediment, giving relief to all the ſymptoms, we are then ſure the matter of the diſeaſe is diſcharging itſelf; and we have more eſpecially hopes that the malady will be thus terminated if this happens in the beginning, before many of the humours and veſſels are vitiated from their healthy condition by a long continuance of the diſeaſe; for if this kind of urine happens late in the diſtemper, it ſeldom

[w] Ibidem. [x] De Humoribus, textu 26. Charter. Tom. VIII. p. 576. [y] Comment. 3. in lib. Hippocrat. de alimento. Charter. Tom. VI. p. 271.

[z] Urina ſubrubra in pleuriticis, habens leve ſedimentum, ſecuram judicationem ſignificat. *Coac. Prænot.* nº 586. *Charter. Tom. VIII. p.* 887.

dom goes off by urine only. This is what I obſerved in the pleuritic patient mentioned at §. 587, (where we treated of a criſis), who on the ſixth day of the diſtemper evacuated an incredible quantity of urine, not only with eaſe, but with a kind of pleaſure; and although the diſcharged urine had ſo large a proportion of a laudable ſediment, yet it only gave a conſiderable relief to the malady, and was far from making a complete cure. See what we ſaid upon ſuch a urine at §. 834, nº 4. where we treated of a Peripneumony.

3. Concerning the nature of this matter, and why it is called *bilious*, conſult what was delivered in the comment to §. 830, nº 3. Aretæus [a] alſo has remarked, that ſometimes in a pleuriſy there is a ſalutary flux or diſcharge from the bowels. He even ſeems to applaud a much greater commotion or diſturbance of the bowels than a mere flux, ſince he uſes the phraſe (χοιλιης ἐκταραχθεισης χολωδεων), *commotive or diſturbing fluxes of the bowels that appear bilious;* alſo, in treating on a peripneumony [b], cured by the like diſcharge, he uſes the word (ἐκταραξις), *commotion* or *diſturbance:* but Hippocrates on this occaſion uſes words that only denote a *moderate* and gentle diſcharge by ſtools, as we obſerved before at §. 830, no 3. Sometimes I have ſeen a diſcharge like this, from the inteſtines, prove of conſiderable benefit even after the fourth day of the pleuriſy. And Aretæus [c] ſeems to have remarked the ſame: for to the former paſſage he adds, *Si autem a ſecunda hebdomade hæc inchoantur, decimo quarto die ſanantur;* "But if theſe fluxes or purgings begin with-
"in the ſecond week of the malady, then the ſick
"recover by the fourteenth day." However, it muſt alſo be obſerved, that ſometimes, in the beginning of pleuriſies, there is a ſymptomatical flux from the bowels, which is prejudicial, or often dangerous, and gives not the leaſt relief to the ſymptoms of the pleuriſy: therefore, to this diſcharge that is about to be ſalutary, Aretæus [d] ſubjoins, *Reſpiratio conquieſcit, mens recte ſe habet, febres minuuntur, cibos appetunt;* "The
"breathing

[a] De Cauſ. et Sign. Morb. Acut. lib. i. cap. 10. p. 9. lib. ii. cap. 1. p. 11. [b] Ibidem, [c] Ibidem, lib. i. cap. 10. p. 9. [d] Ibidem.

" breathing grows tranquil, the mind acts rightly, " the febrile symptoms abate, and the sick gain an " appetite to food."

This is the reason why the very learned Triller [e] condemns such a smyptomatical flux or diarrhœa as dangerous, and for the most part fatal, when it supervenes in the beginning of a pleurisy; but that it has often proved salutary in the course of the distemper, when the more violent symptoms have once abated, he has confirmed to us by observations both of his own and others.

4. Concerning these abscesses we treated in the chapter of a Peripneumony, at the numbers mentioned in our text.

5. Faithful observations have taught us, that the morbific matter of acute inflammatory distempers often changes its seat or residence; and that the event of such a removal, or translation, is judged good when it lodges itself upon a part of the body where it may lie with less danger than before. Thus, in the history of a Frenzy, (§. 779.) we observed, that a supervening pain upon the breast or lower limbs, or a violent cough, often terminate that malady; as in that place we demonstrated by many instances out of the books of Hippocrates's Epidemics: And in our history of a Quinsy it was proved (see §. 809.) that the material cause of the malady very frequently changed its seat, and removed to other parts: But at the same time we shewed, that this removal was not always happy in its event, even though the matter of the distemper should be derived to parts very distant, and seemingly less dangerous. It is therefore a careful observation of the whole course of the malady only that can inform us, whether such a metastasis, or removal, will be profitable, and towards which part of the body it may be safely made.

It is true indeed, that in a pleurisy there is great danger, more especially for that the violence of the pain hinders the inspiration, and thereby endangers a suffocation; or, if the distemper comes short of that, being

[e] De Pleuritide, p. 54.

being incapable of a reſolution, there is the danger of an incurable ſuppuration, or a fatal empyema. Here, therefore, great advantages may be expected if the matter of the diſeaſe ſhould happen to change its place; and it is to this intention that Hippocrates [f] ſeems to have directed his treatment, when he adviſes, in the cure of a dry pleuriſy, after blood-letting and other remedies, to cover the affected ſide (*fomentis tepentibus extrinſecus admotis, ut morbus per totum corpus diſpergatur*) "with warm foments outwardly applied, "to ſcatter or diſperſe the diſeaſe throughout the "body." But it is evident from faithful obſervations, that the conſequences as to the happineſs of the event will be very different according to the parts upon which this metaſtaſis or tranſlation is made. Accordingly Hippocrates [g] pronounces, *metuendas eſſe illas pleuritides in quibus dolore ſurſum vergunt*, "that thoſe pleu-"ſies are to be feared in which the pains remove up-"ward." The like he alſo gives us in another place [h]. This is alſo confirmed by what we obſerved at §. 772, upon ſuch a metaſtaſis occaſioning a ſymptomatic frenzy.

But I have likewiſe obſerved the pain go from the ſide towards the lower part of the abdomen, without any good conſequence; for, within twelve hours after, the pain has returned again to the ſide, and in a degree much more ſevere than at firſt. In a robuſt pleuritic man, on the thirteenth day of the diſeaſe, when all things ſeemed to incline for the better, a ſevere pain ſuddenly aroſe in the left foot, without any redneſs or ſwelling: here the urine was made thin; and after a few hours the patient turned delirious, lay ſpeechleſs, and at length expired. On the contrary, in another man, who after two large blood-lettings and warm foments, *&c.* applied all night to the ſide, the pleuritic pain greatly abated, and on the fourth day of the malady a violent pain aroſe about each of his great toes near the metatarſus or inſtep, whereupon the pain of the ſide and fever inſtantly went off, and

[f] De Morbis, lib. i. cap. 11. Charter. Tom. VII. p. 547. [g] Coac. Praenot. 381. Charter. Tom. VIII. p. 873. [h] Ibid. nº 73. Charter. Tom. VIII. p. 856.

and the patient happily recovered. Here we are to obſerve, that this man never had been before troubled with the gout; nor, as far as ever I could hear, was he afflicted with that diſtemper afterwards. But how different are the events of theſe two metaſtaſes, or tranſlations, to the lower parts of the body!

But when the pain invades the back, ſhoulder, or arm, while that of the pleuritic ſide evidently abates, it makes a happy prognoſtic; ſo that I remember not to have ſeen one pleuritic perſon periſh by the diſeaſe, when ſuch a metaſtaſis was made to thoſe parts. The very learned Triller [i] has confirmed the ſame thing by his own obſervations. It may perhaps be worth remarking, that theſe critical pains happen oftenеſt upon the ſixth day of the diſeaſe, at leaſt thus I find it upon reviewing the hiſtories of pleuritic patients that have been committed to my care; and under Triller, five out of eight patients, who had theſe critical pains, perceived them thus changing the diſeaſe upon the ſixth day. But obſerve, that this metaſtaſis does not appear of itſelf to cure the diſeaſe; but is rather a meſſenger proclaiming a ſalutary criſis.

Hippocrates ſeems to have remarked that thoſe ſymptoms ſometimes occur in pleuritic perſons, but without informing us that they afford almoſt a certain preſage of the patient's recovery: *But if a pain affords a ſign at the clavicle of its own ſide, or invades with a dulneſs about the arm, breaſt, or above the diaphragm, it will be of ſervice to cut open the internal or great vein of the arm, and without any heſitation to draw plenty of blood, until inſtead of (buff or) livid you find it come much more red, or till inſtead of ſincere or florid it flows out livid; for both theſe conditions of the blood are obſerved in pleuriſies* [k]. After the ſame manner he recommends veneſection for the like caſe, in another part of the ſame

[i] De Pleuritide, p. 5. Et in hiſtoriis aegrorum, ibidem, p. 69. 77.

[k] Quod ſi dolor quidem ad claviculam ſui det ſignum, vel ad brachium gravitas, aut circa mammam, aut ſupra ſeptum tranſverſum, ſecare juvat internam cubiti venam, neque copioſum ſanguinem detrahere cunctandum eſt, uſque dum multo rubicundior, aut pro puro et rubicundo lividus fluat, utrumque enim contingit. *De Acutor. Victu, textu* 10. *Charter. Tom. XI. p.* 41.

ſame book [l]: yet I have ſeen a happy cure of this malady, and am therein backed by the obſervations of Triller, when no blood-letting has been uſed after theſe critical pains of the arm, back, or ſhoulder, have attended. But ſtill, in the ſame book of Hippocrates, there is another text [m], which ſeems to inform us that he expected a good event from a pain about the clavicle in a pleuriſy; for he ſays, *At ſectio venæ non ſimiliter dolorem ſolvit, niſi dolor ad claviculam pertingat.* "But opening a vein does not in the like manner cure "the pain, unleſs the ſame extends to the clavicle."

There may poſſibly be other ſalutary tranſlations in pleuriſies of certain epidemical conſtitutions. For thus Baglivi [n] aſſures us, that in the various hoſpitals of Italy, he obſerved, all pleuritic patients recovered who were invaded with a pain in the internal parts of the ear, followed afterwards with an abſceſs and a diſcharge of matter: and this he remarked more eſpecially at Rome, when very ſevere pleuriſies were there popular after a very hard winter.

6. How important the ancient phyſicians made a diſcharge by ſpitting, in diſeaſes of the breaſt, is plain from the accounts given at §. 830, nº 2. where we treated of a Peripneumony often happily cured by this evacuation. Now it is evident, from paſſages there alledged from the ancients, that they obſerved the like effect from a ſpitting in a Pleuriſy. For thus Aretæus [o] praiſes a ſpitting in this malady, when it begins on the third day, comes up eaſily, and is of a light, uniform, humid, and round conſiſtence. We have ſeen before, that the ancients (§. 876.) eſteemed dry pleuriſies the moſt difficult of all to cure; and that Hippocrates judged this excretion to be proper to a true pleuriſy (§. 878.) from pronouncing that a baſtard pleuriſy never diſcharged itſelf by ſpitting. And altho' Sydenham [p] ſeems not to have confided much in expectorations of the matter of the diſeaſe in a pleuriſy, but rather choſe to forward the cure by blood-letting; yet in relaing

[l] Ibidem p. 159. [m] Ibidem, textu 8. p. 41. [n] Prax. Med. lib. i. cap. 9. p. 34. [o] Morb. Acut. lib. i. cap. 10. p. 9. [p] Sect. vi. cap. 3. p. 337.

ting the pleuritic ſymptoms, he confeſſes [q], "that the "fever, with all the fatal ſymptoms attending it, "namely, cough, ſpitting of blood, pain, *&c.* gra- "dually abated in proportion as there was a more free "expectoration of the matter of the diſeaſe." But for the parts affected in this malady, he aſſigns the pleura, or intercoſtal muſcles; concerning which we treated before, at §. 875.

But it has appeared a difficulty to ſome, how the matter of a pleuriſy could be evacuated by a ſpitting diſcharged from the lungs, unleſs the lungs were alſo affected; ſince the impacted matter was lodged in the ſide. Now, although it is ſufficient for a truſty phyſician to know that the matter of the diſeaſe is really thus evacuated, without plainly underſtanding the manner or the ways whereby it is brought about; yet we are over and above this taught by numerous obſervations, that the contiguous lungs imbibe the offending humours into their ſubſtance, and afterwards throw them out by a cough. Thus Galen [r] has obſerved, that mead, or an emulſion of honey, injected into the capacity of the thorax, is ſpit out through the lungs; and in confirmation of the ſame thing, he obſerves in another place [s], that when bones are fractured, often without injuring the ſkin that covers the fracture, there is a tranſfuſion of blood ſufficient to ſtrain the bandages, although the ſkin be a membrane much denſer than that which covers the ribs. But Diemerbroeck [t] alſo aſſures us, that in thoſe afflicted with an empyema, after making the paracenteſis of the thorax, he has thrown in bitter and abſterſive injections, which they have taſted in the mouth, and brought up a good part of by ſpitting. Moreover, Helvetius [u] has made an obſervation, that it is a production or continuation of the pleura that forms the outward and inward membrane or covering of the lungs. Can there be any difficulty then for the matter, now concocted and rendered fluxile, to make its way ſlowly, through

[q] Ibidem, p. 331. [r] Meth. Med. lib. v. cap. 8. Charter. Tom. X. p. 115. [s] Comment. 3. in Librum Hippoc. de Articulis, textu 58. Charter. Tom. XII. p. 394. [t] Anatom. lib. iii. cap. 13. p. 307. [u] Acadam. des ſciences, 1718. Mem. p. 25, 26.

through the continuous membranes and cellular ſubſtance of the lungs, into their bronchæ or air-pipes, from the pleura? or may not alſo the contiguous ſurfaces of the lungs, which after a pleuriſy are generally found growing to the pleura, immediately imbibe the ſaid matter into themſelves? In this reſpect Cœlius Aurelianus has well pronounced, *And the ſaid matters are carried through the lungs, and coughed up in ſpittings, whenever they are derived into the lungs from the adjacent parts, from whence they are received by paſſages known by reaſoning or effects, which paſſages ſome call* expectorant [w].

But in the mean time, the laudable induſtry of the celebrated Lanciſi ſeems happily to have diſcovered ways by which the matter of the diſeaſe may paſs into the lungs directly from all parts infeſted with a pleuriſy, and be from thence diſcharged by a ſpitting. For in his epiſtolary diſſertation, *De vena ſine pari* [x], he remarks, that the mouth of the vena azygos opens into the cava, armed with a ſort of muſcular ſemicircle like an hemiſphincter, and a peculiar nerve: moreover, this inſertion of the vena azygos into the cava is made before the wind-pipe, under the ſternum, before the diviſion of the trachea into the two large branches of the bronchia; and in the ſame place the trunk of the vena azygos, and part of the vena cava, are connected to the wind-pipe, not merely by a ſimple or cellular coheſion, but by ſtrong fibres and ſmall veſſels which penetrate even into the inner ſurface of the trachea, as he diſcovered by a fair experiment: for he made a ligature upon the vena cava, above and below the part where it was entered by the vena azygos; and having firſt diſcharged the blood, he injected warm water, tinctured with ſaffron, through an opening in the trunk of the azygos; and immediately he perceived the yellow water flow out through the mouth and noſe, as the head of the dead ſubject hung down from the table. But moreover, the wind-pipe being ſlit open,

[w] Et tuſſita itidem ſputa per pulmonem feruntur, ſiquidem in ipſum veniant ex vicinis, accepta per vias mente ſenſas, quas λογοθεορητας appellant. *Acutor. Morbor. lib.* ii. *cap.* 16. *p.* 116.

[x] Habetur in editione Romana ſecunda de motu cordis et aneuryſmatibus, p. 373. et in Adverſar. Anatom. v. Morgagn. p. 79.

all the way from the thyroide cartilage, he perceived, by renewing the injection, that the yellow liquor, exciting little bubbles, distilled through most minute orifices from the inner surface of the upper part of the wind-pipe, which lies under the insertion or communication that it makes with the trunks of the vena cava and azygos. By another experiment, he afterwads proved, that such ducts opened into the trachea in a much greater number, and with more patulent orifices, from the vena azygos, than from the adjacent part of the vena cava there likewise adhering to the wind-pipe.

If now we consider the appearances which happen here in pleurisies, there will be good reason to suspect, that the matter causing the malady may, by these ways, be discharged into the wind-pipe, when once it is become concocted and moveable. Lancisi observed often, that the pleuritic patients, before the fourth day, expectorated a bloody matter, which afterwards appeared white and concocted; and that they did not draw up this from the bottom of the breast, but pointed out to him the said place, where, under the sternum, the vena azygos opens into the cava.

But then the following difficulty seems to attend this opinion; That the blood contained in the vena azygos, may more easily pass through its opening into the cava, than be urged through the narrow ducts which open from that vein into the wind-pipe. But yet if a greater resistance is made at the opening of the said azygos to the blood that is to pass that way; in that case, this course becomes practicable. Whether is it that the apparatus resembling an half sphincter at the opening of the azygos is able to shut it; or that, from the impeded respiration in a pleurisy, when the lungs are very difficultly able to transmit the blood, the vena cava, being more distended, is not able freely enough to receive the blood from the vena azygos. In the bodies of persons deceased of a peripneumony and inflammation of the midriff induced by a severe pleurisy, he observed the branches of the azygos, in that side which had been pained, to be

varicous:

varicous: And in the body of a man who died of an inflammation of the præcordia, he ſaw a polypus of remarkable bulk, which extended from the trunk of the azygos to the vena cava, and even to the right auricle of the heart: Whence it appears, that the free paſſage of the blood from the vena azygos into the cava may be ſometimes impeded in diſeaſes.

But whether may not the triangular muſcle of the ſternum, by preſſing this place in its action, operate ſomething towards the circumſtance in queſtion? Thus Lanciſi himſelf, being ſometimes afflicted with pains and defluxions of the breaſt from his advanced age, perceived by a ſenſation, that the greater part of the concocted ſpitting came from the part above-mentioned, and not from the bottom or extremities of the lungs; and he believed himſelf able, by a uſe of the triangular muſcle of the ſternum, to make an eaſier diſcharge or expectoration of the humour.

Now, whether the matter of the diſtemper, diſſolved and rendered fluxile, enters the contiguous lungs through the pleura, to which in theſe maladies they often cohere; or whether it paſſes through branches of the vena azygos into the wind-pipe, or from the mouth of the vena azygos into the vena cava, and thence paſſing through the right cavity of the heart into the lungs, finds a way through the pulmonary cells and air-veſſels, (the poſſibility of which we proved before, at §. 830, nº 2.); it is certain, from practical obſervations, that by ſome or all of theſe ways pleuriſies are cured by ſpittings. But then it is not every ſpitting that relieves this malady: and therefore it is our buſineſs to ſee what are the conditions neceſſary to a ſpitting, by which we may reaſonably expect from it a cure of this diſtemper.

The ſpitting muſt be copious, free, and giving relief.] For there is otherwiſe continually ſwept off by a cough, ſome quantity of the mucus which naturally lines the internal ſurface of the wind-pipe; and then this takes nothing from the cauſe of the malady. But if the flux by ſpitting leſſens the pain and other ſymptoms, by which the patient evidently finds relief,

we then know that it leſſens this cauſe. Hence Hippocrates[y] lays down this as a general rule, (which we obſerved before in our hiſtory of a peripneumony §. 830, nº 2.) "That all ſpittings are bad which do "not relieve the pain; but ſuch as have that effect, "are of all the beſt."

Not from a cold or defluxion.] For when there is a coryza or defluxion from a checked perſpiration, there is frequently a copious diſcharge by ſpitting, but ſuch as will give no relief to the material cauſe of a pleuriſy, but only evacuate the mucus of the catarrh. It ſeems alſo that Hippocrates would intimate this to us, when, in treating upon the good and bad ſpittings that appear in diſeaſes, he ſubjoins, *But ſneezings and defluxions from colds make a bad ſign in all diſorders of the lungs, whether they come before or follow after*[z].

Immediately reſembling matter; but turning whitiſh ſoon, or before the fourth day.] We have before treated largely of theſe ſpittings, and endeavoured to give a reaſon why they are called *purulent* or *pus-like*, even though they may have a different colour; and why they ought ſpeedily to turn *whitiſh*. See the commentaries to §. 830, nº 2. I have often ſeen that this white, concocted, or pus-like ſpitting, has cured the pleuriſy: and even in a woman advanced into the fifth month of her pregnancy, when this ſpitting came on plentifully on the ſecond day of the pleuriſy, it immediately relieved all the ſymptoms, ſo that the malady itſelf was cured by the fourth day. Here a vein was opened on the firſt day of the diſtemper, but there was no occaſion to repeat it afterwards. This is the more remarkable, becauſe Hippocrates[a] abſolutely pronounces a pleuriſy fatal to women with child: and in another place[b] even declares, in general, that all acute diſeaſes are fatal to gravid women. However, Celſus has juſtly reſtrained or limited the ſeverity of this prognoſtic,

[y] In Prognoſtic. ſentent. 51. Charter. Tom. VIII. p. 645.

[z] Coryzas autem et ſternutationes in omnibus circa pulmonem morbis, et præceſſiſſe et conſequi, malum. *Ibid. ſent.* 49. *p.* 643. *et Coac. Prænot.* nº 399. *ibid. p.* 875.

[a] De Morbis, lib. i. cap. 2. Charter. Tom. VII. p. 533. [b] Aphor. 30. ſect. v. Charter. Tom. IX. p. 213.

prognoſtic, by informing us only, that *women with child are* eaſily *taken off by acute diſeaſes* [c]. However, it is in the general true, that a pleuriſy happening in the time of pregnancy is always more dangerous.

But again; not only this white or concocted ſpitting, but alſo the yellow kind, mixed with ſmall particles of blood, is profitable to this malady. I have ſometimes ſeen, in a pleuriſy, a tough or clammy ſpitting, tinged of a reddiſh colour with blood, the diſcharge of which has given equal relief. Galen [d] expounding a difficult text of Hippocrates, the brevity of which makes it more than a little obſcure, and which forbids blood-letting in thoſe pleuritic patients who have a bloody ſpitting, tells us, that he himſelf was called to a patient, who believed he laboured under an hæmoptoë, or flux of blood from the lungs, when it was in reality only a ſpitting of ſanguineous matter from the pleuritic ſide (πτυσας αιματωδες απο πλευρης): now although the habit and ſtrength of this patient appeared ſuch that Galen would have bled him if he had laboured under an hæmoptoë, yet here he omitted it becauſe it was only a gentle pleuriſy; and adds, that this patient was recovered by other ſuitable remedies without veneſection; *mitiſſimæ enim pleuritides ſunt in quibus ſanguinolentum ſpuitur*, "for that thoſe "are the mildeſt pleuriſies in which the ſpitting is "ſomewhat bloody." Hence Hippocrates [e] has pronounced thoſe pleuriſies moſt ſalutary in which yellow ſpittings are diſcharged intermixed with a little blood; to which pleuriſies he therefore gives the denomination both of *ſanguine* and *bilious*, and ſays that they generally come to a criſis by the ninth or tenth day: but it is from their *yellow* colour (not their *matter*) that theſe ſpittings are called bilious; for in his prognoſtics, and in his Coan Preſages, no 390, the ſame ſpitting which he had a little before called *bilious* (χολωδεις) he [f] again calls *yellow* (ξανθον). But Duretus in his comment this place obſerves, that he has often with con-

[c] Mulier quoque gravida acuto morbo facile conſumitur. *Lib.* ii. *cap.* 6. 55. [d] Commentar. 3. in Epidem. 6. Charter. Tom. IX. p. 472.
[e] In Coacis Praenot. nº 387. Charter. Tom. VIII. p. 873. [f] In Coacas Hipp. 252.

cern ſeen blood-letting ordered imprudently by phyſicians at this juncture of the diſeaſe, by which the ſpitting has been ſuppreſſed with a fatal event. Baglivi [g] alſo confirms the ſame thing by his own obſervations.

§. 889. WHEN the ſigns, accurately obſerved, declare the condition of the pleuriſy (§. 875.) to be like that before deſcribed (§. 888.) there is then no alteration to be attempted by the phyſician, but all things muſt be left continuing in their courſe. Therefore there muſt be no blood-letting, or other evacuation, or alteration. Only, 1. The patient muſt perſiſt in the uſe of a light, or ſoft, and thin diet; muſt enjoy a ſtill or calm diſpoſition of body and mind; muſt breathe an air that is temperately warm and moiſt; and muſt be reconciled to ſleep, either naturally, or by the uſe of the gentleſt hypnotics; with ſuch medicines as are emollient, diluent, and moſt gently aperient. 2. A regard muſt be had to every emunctory, or diſcharge, ſerviceable to the malady: and therefore, in the piles (§. 888, no 1.) the anus is to be fomented with an emollient, relaxing, and aperient fotus; or, if a diſcharge does not eaſily follow from thence, it muſt be obtained by the ſucking of leeches applied to the part. If the renal evacuation (§. 888, no 2.) be obſerved, fomentations of the ſame kind are to be immediately applied to the kidneys, hypogaſtrium, and perinæum; gentle aperient diuretics are to be exhibited; the air of the chamber muſt be kept ſomewhat cooler than otherwiſe; while ſweats, or other evacuations are avoided; balſamic and diuretic glyſters are profitable. In caſe

[g] Prax. Med. lib. i. cap. 9. p. 36.

caſe of a bilious flux, (§. 888, n° 3.) the whole abdomen is to be ſwathed up with the like kind of emollient foments; laxative clyſters are to be thrown into the bowels; and a relaxing diet is to be preſcribed. In an abſceſs, or purulent diſcharge, (§. 888, n° 4.) which is foreſeen (§. 838.) while the part affected is at the ſame time pointed out, (§. 839, 840, 841.); then the treatments before directed are to be uſed, (§. 859, 860, 861.); and when an opening is once procured, the part is to be kept for ſome time from cloſing, by ſuppuratives. Again, in caſe of a critical pain tranſlated (§. 888, n° 5.), beſides the common remedies, the parts into which the pain removes are to be fomented with warm emollients, liniments, gentle frictions, and ſtimulated by emplaſters that are a little attractive. Laſtly, in the ſalutary ſpitting, (§. 888, n° 6.) the whole courſe is to be managed as in a reſolvable peripneumony; and therefore every thing to be uſed or done in this caſe may be ſeen before at §. 850, 851.

When a phyſician is called to a patient in a pleuriſy, his firſt inquiry is, Whether the malady be ſo ſlight and benign, that one may expect it will terminate by a mild reſolution, §. 887. This will appear from the ſlightneſs of the ſymptoms, and laxity of the patient's habit or conſtitution; for in denſe or much exerciſed bodies ſuch a reſolution of the malady can hardly be expected. But when the pleuriſy is more violent, ſo that there are little hopes of curing it by reſolution, but that a concoction and excretion of the matter of the diſtemper is neceſſary; then a careful inquiry muſt be made whether or not this is to be effected by the moſt potent aſſiſtances of art, ſuch as copious blood-lettings, clyſters, and other remedies that are able to moderate the too great violence of the fever; (ſee §. 610.)

The

The next buſineſs is, To obſerve whether any of the ſymptoms of the malady denote that nature endeavours after ſuch an evacuation of the concocted matter, or a depoſition of it upon other parts leſs dangerous. When either of theſe events appear to be at hand, ſince practical obſervations in all ages have taught that the pleuriſy is thus quickly and ſafely cured; it is evident enough that no alteration ought to be made, but the preſent poſture of the malady is to be upheld, which may be effected by the following means.

1. In every diſeaſe, the life and the powers of the body to be preſerved make a principal conſideration; towards which, the foods and drinks are highly conducible. But theſe do not reſtore the ſubſtance that is waſted from the body by the actions of life, unleſs they are firſt ſubdued and changed by the remaining powers of the body. Since therefore the body languiſhes even by a ſlight malady, whereby many of its functions are performed leſs readily than in health; it is thence readily apparent, that ſuch things ought to be given in the diet, as, being naturally in a great meaſure of the ſame diſpoſition with our healthy humours, may be very eaſily ſubdued or aſſimilated into them. But upon this head we have treated largely before in the general cure of fevers, §. 599, 600, 601, 602. The wiſe Hippocrates [k] gave his pleuritic patients the cream of barley-gruel, which in itſelf greatly reſembles chyle, that it might both nouriſh and moiſten the body. The like is alſo recommended, together with oat-gruel, by Trallian [i]; who in general orders ſuch nouriſhments to be given as are moiſtening, without being able greatly either to heat or cool. Whence likewiſe a moderate temperature of the air will be neceſſary; the manner of procuring which was mentioned before at §605, nº 2, 3. But ſince watchfulneſs diſorders the body even when it is firm and in health, therefore ſleep is to be here rather indulged: and if it comes not naturally, it may be ſolicited.

[h] De Victu Acutor. Charter. Tom. XI. p. 23, 160, 161.
Lib. vi. cap. 1.

ted by farinacious emulsions of the cold seeds, with almonds, *&c.* to which join some of the mildest anodynes, more especially those prepared from the flowers of the poppy, which are never mischievous; but the stronger opiates or narcotics are not here to be used, since they commonly suppress most of the excretions from the body. Hither also belong rest of body and mind, that there may be an entire tranquillity, without any disturbance, throughout the body, while nature is intent upon the concoction and excretion of the matter of the distemper. Nor is there any occasion for other remedies than such as dilute the humours, and render them fluxile; with such as dispose the vessels to relaxation, that they may more easily transmit the diluted humours, such as we before recommended at §. 887.

2. The remedies before mentioned are suitable in every discharge or translation of the matter of the disease; but others may be also used, and are necessary, when the parts are known towards which the matter of the distemper is going to be deposited.

Therefore in the piles, §. 888, no 1.] Here consult what has been said upon this hæmorrhoidal discharge towards the cure of a febrile delirium, at §. 702.

If the renal evacuation (§. 888, no 2.) be observed.] Concerning these salutary urines we treated at §. 853, where we considered a like critical evacuation of the matter of the distemper in a peripneumony: but since by sweats more especially, as well as by other evacuations, a large part of the diluent liquor that would form urine is drawn away from the kidneys, therefore these are to be avoided. Hence an air which is not hot stands recommended, because it may conduce to avoid a sweat; for we observe, that in healthy persons there is less humidity perspired by the pores of the skin in cold weather, while more passes off through the kidneys.

In case of the bilious flux, (§. 888, no 3.) *&c.*] We before treated upon this subject also, at §. 852.

In an abscess or purulent discharge, (§. 888, no 4.) *&c.*] Concerning all these particulars we have already treated

treated at the numbers referred to in the text. But it must be observed, these abscesses are to be speedily opened, as they require no maturation of crude inflammatory matter into laudable pus; for here the pus, or the matter which is lodged instead of pus, being before formed in another part, gathers by a translation or deposition, whereby an abscess is suddenly formed, although the skin or integuments appear not affected, as we observed at §. 593. But such a part, after the abscess is opened, may be gently irritated by those topicals which the surgeons call *suppuratives* or *digestives;* whereby an immediate closing up of the opened parts will be prevented, and an opportunity given for the morbid humours to drain off from the blood and healthy juices, by this part, towards which nature gives it a tendency for the cure of the disease.

Even Hippocrates approves (as was said at §. 842.) of such abscesses rendered almost fistulous, that they may keep the longer running and from healing; and the same thing, in imitation of nature, we may thus endeavour for by art.

Again, in the case of a critical or translated pain, (§. 888, no 5.) *&c.*] That is to say, when the pain of the side removes to the shoulder, arm, *&c.* For trusty observation has taught us that the malady is thus relieved; and therefore it is that art endeavours by diluents, attenuants, and other medicines, to dissolve the matter of the distemper, and render it fluxile; and then, at the same time, to solicit or determine it by gentle frictions, emollient fomentations, and aromatic plasters, such as those of labdanum, melilot, or the like, so as to excite a gentle stimulus on the parts, to facilitate and expedite the derivation of what ought by a salutary metastasis or translation to be here deposited. See what has been said at §. 134, concerning derivatives, attractives, and propellents.

Lastly, In the salutary discharge by a spitting (§. 888, no 6.) *&c.*] All is applicable to this place which we delivered before upon the cure of a peripneumony by spitting, §. 848: which see.

§. 890.

§. 890. BUT by *Art*, the cure of a pleurisy, without leaving any other distemper, is performed according to the following method: If the pleurisy above described (§. 875.) be recent, before the third day is yet over, appears great from the violence of its symptoms (§. 875, 883.) dry or without a spitting (§. 876.) and in a person of a strong, exercised, and dry habit of body, without hopes or signs of a salutary resolution (887.) or a critical excretion (888.): Under these circumstances, 1. Without further delay a large quantity of blood is to be let, in a stream quickened by various helps, from a large vein, with an ample orifice, while the body lies supine and at rest; and while the blood flows, let be quickened by the patient's breathings, with coughings and sighings, while at the same time the affected side is fomented and gently rubbed; which process you are to continue until there is a considerable relief of the pain, or the appearances of an approaching swoon or fainting; and this discharge is to be again repeated, conformable to the urgency of the returning symptoms for the removal of which it was first practised; or if the buff or sizey crust (384.) disappears, it is a warrant for stopping any further use of the lancet. 2. Immediately after venesection, are to be applied tepid fomentations, bathings, liniments, and emplasters, which may be of service by relaxing the vessels, resolving the matter, and abating the pain, or turning it off towards a meaner part: (See §. 395, n° 3. and 398, n° 6.) 3. At the same time, inwardly, are to be given such remedies as dilute, resolve, relax, moderate, cool, and ease, and quiet the pain; which being drank warm and fluid

fluid in large quantities, and determined in their operations towards the part affected, may afford good help; and these are to be varied in their qualities and exhibitions conformable to the change of appearances, always observing to chuse out such as are the most averse to putrefaction. 4. It will be necessary to order a thin or light, emollient, and cooling diet, such as is opposite to inflammation. 5. Lastly, every thing is to be avoided which is drying, heating, or stimulates a more violent circulation; such as, great heat of the air, sun, fire, bed, diet, or medicines.

We have now seen in the foregoing aphorisms, how a pleurisy may be cured, by the help of nature chiefly, with little or no assistances from art; for all the physician had to do under those circumstances of the malady, was only to keep it in the present course of mild resolution to which it inclined, without introducing changes of any kind. But when the pleurisy was to make its cure by the concoction, and excretion, of its morbific cause, it was incumbent on the physician to watch the parts, or outlets, to which the proper signs shewed the matter to have a tendency, to see that those parts were properly relaxed and fomented, the humours inwardly well diluted, and the patient's strength upheld by a light and emollient nourishment: and these together were sufficient.

But if now the pleurisy be violent, as we may know from the sharpness of the pain, the great hindrance to the breathing, and the intensity of the fever, there are then no hopes for such a mild resolution of the malady, as we proved before at §. 386, where we treated on the cure of inflammation by a resolution. If then there are no hopes that the matter of the distemper may be soon digested and expelled; and especially if there be little or no spitting to give any relief to the distemper; it is then called a *dry* pleurisy: and we may reasonably conclude so stubborn a malady will not at all end in

in health of its own accord; and this more particularly if the diſtemper be in a ſtrong and exerciſed perſon, as Hippocrates aſſures us [k], when he ſays, "Perſons exercised, and of a denſe or ſtrong habit, ſooner periſh by pleuritic and peripneumonic diſeaſes, than "thoſe who are not exerciſed." The reaſon of which obſervation we gave before, at §. 386.

Here then we muſt have diligent recourſe to the aſſiſtances of art, that the pleuriſy may be cured without generating another diſtemper. It appeared evident from what we advanced at §. 875, that there is a true inflammation in ſuch a pleuriſy; and therefore all the events of inflammation, either ſuppuration, gangrene, or ſchirrhus, may here take place. The way which ends by a ſuppuration, although it be not always very dangerous in a phlegmon of the external parts of the body, is however much to be feared in a pleuriſy, becauſe the abſceſs that follows after the malady very frequently pours out its collected matter into the cavity of the breaſt, by which a fatal empyema is often produced. We are therefore to uſe all the aſſiſtances of art, in order to prevent the inflammation we call a pleuriſy from ending in an abſceſs.

Now it appeared (§. 396.) when we treated on the cure of inflammation by reſolution, that the principal remedy to anſwer that intention was to diminiſh the quantity and impulſe of the circulating humours from urging upon the inflamed parts, and chiefly by blood-letting. And this is the more neceſſary, as the acute pain impeding the reſpiration does often, in the worſt kind of pleuriſy, ſuffocate the patient, before the inflammation can be able to make a ſuppuration. Further, we obſerved upon another occaſion (§. 141.) that Galen recommends a very plentiful blood-letting in the moſt ardent fevers, violent inflammations, and the ſevereſt pains; and that in ſuch he recommends blood to be drawn even until the patient faints away. The moſt urgent reaſons do therefore apparently call out for blood-lettings in a pleuriſy.

Nor have I ever once obſerved veneſection to be miſ-

[k] Coac. Prænot. 398. Charter. Tom. VIII. p. 875.

chievous, even in thoſe pleuriſies where, after an abatement of the malady, there has followed a concoction and excretion of the matter of the diſtemper through the various outlets before enumerated, §. 888. We there indeed gave an admonition to abſtain from blood-letting when thoſe excretions appeared to be at hand, but not otherwiſe. On this occaſion you may peruſe the hiſtories of pleuritic patients that are given in the very learned Triller's diſſertation upon this malady, which we before recommended; for by that, it will appear, all thoſe ſalutary diſcharges enſued when the violence of the dangerous malady had been firſt abated by repeated blood-lettings. And this is a truth I have ſeen confirmed alſo by my own particular obſervations, in the courſe of practice. For in a violent pleuriſy, although by a happy treatment the matter of the diſtemper may be diſſolved and rendered fluxile, it hardly ever once happens that this matter can be again aſſimilated with the healthy juices, ſo as to circulate with them freely, and without prejudice to the vaſcular ſyſtem, which this matter almoſt conſtantly ſtimulates to ſuch a degree as obliges them to throw the ſame off by one out-let or another, in a ſenſible diſcharge from the body. This caution was here neceſſary to be given, leſt any one ſhould fear to order blood-letting in the beginning of a pleuriſy, thinking it might hinder the ſaid ſalutary endeavours of nature to expel that matter.

Now although the ancient phyſicians were timorous of venæſection for this malady in infants, old people, and women with child; yet in our days we are taught by unerring obſervations, that even in theſe the lancet may be very ſafely uſed, provided the quantity of blood drawn be proportionable to the age, ſtrength, and circumſtances of the patient, as we before obſerved, at §. 610.

Nor have I neglected to open a vein even while the menſtrual flux has been upon the patient, if her breathing appeared much hindred; which was always attended with good effects. In like manner, even in child-bed women ſeized with a pleuriſy, although they have

have had the lochial flux, blood-letting has been of conſiderable uſe; which is a truth confirmed alſo by the obſervations of Le Motte [l], who has ordered repeated blood-letting from the arm, even when that flux has not been ſmall.

Now although it be certain, that when this malady is to be cured by art, ſo as not to leave another diſtemper after it, blood-letting is the beſt performed as early as poſſible; yet even when the malady is further advanced, the lancet will be of uſe to the adult pleuriſy, if it has been neglected in the firſt attack. Celſus has indeed obſerved, in treating of a pleuriſy, That *blood-letting is the cure, if the pain be recent and ſevere; but if the caſe is more ſlight, or of long ſtanding, this help will either come too late, or be without any manner of uſe* [m]. And in another place, treating of blood-letting from the veins, he [n] adds, *But as it is ſometimes neceſſary to let blood even on the firſt day of the malady, ſo it is never uſeful after the fourth day, in which ſpace the matter of the complaint is either exhauſted or reſolved, or elſe has ſuppurated the body itſelf; whence the blood-letting may indeed weaken the malady, but cannot entirely remove it* [n]. And indeed it is very certain, that if a violent inflammation has continued for four days, we have juſt reaſon to fear it is beginning a ſuppuration. But then, with reſpect to a pleuriſy, we have before ſeen that blood-lettings from a vein are advantageouſly uſed much later than this. A notable inſtance of this occurs in Hippocrates [o], in the caſe of Anaxion, who lay ill of a dry pleuriſy, to which hot fomentations had been applied without ſucceſs; he was wakeful, and turned delirious on the fixth day of the diſeaſe; but the ſeventh day was very troubleſome, for the fever increaſed, and the pains were not at all abated;

[l] Traite des Accouchemens, liv. ii. chap. xxi. p. 224.

[m] Remedium vero eſt magni recentiſque doloris ſanguis miſſus. At, ſive levior, ſive vetuſtior caſus eſt, vel ſupervacuum, vel ſerum, id auxilium eſt. *Lib.* iv. *cap.* 6. *p.* 209.

[n] Sed ut aliquando etiam primo die ſanguinem mittere neceſſe eſt, ſic nunquam utile poſt diem quartum eſt, cum jam ſpatio ipſo materia vel exhauſta eſt, vel corpus corrupit; ut detractio imbecillum id facere poſſit, non poſſit integrum. *Lib.* ii. *cap.* 10. *p.* 80.

[o] Epidem. 3. ægrot. 8. Charter. Tom. IX. p. 302.

on the eighth day, a large quantity of blood was taken by opening the vein of the cubit or fore-arm, whereby the patient was relieved in his pain; and after ſeveral critical diſcharges, the malady was carried quite off by the thirty-fourth day. But Galen [p], in his comment upon this place, obſerves, that Hippocrates particularly mentions this caſe by way of admonition, becauſe the phyſicians of that time laid it down as a kind of rule, never to bleed from a vein after the fourth day. Triller [q] has in this caſe very ſucceſsfully trod the ſteps of Hippocrates, in the cure of a very dangerous pleuriſy, attended with the worſt ſymptoms; in which, with very conſiderable relief, he drew about a pound of blood from a vein of the arm, upon the eighth day of the malady; and even in the morning of the ninth day, when there appeared ſome danger of a ſuffocation enſuing, he again took ſix or ſeven ounces of blood more from the foot; and by theſe expedients he in a manner ſnatched this patient from the jaws of death.

Hippocrates indeed ſeems, by the laſt mentioned caſe of Anaxion, to have firſt endeavoured to procure an abatement of the pain by emollient and warm fomentations, before he had any recourſe to blood-letting; and in another place [r], he even aſſures us, that a pain of the ſide, either in its beginning, or of longer ſtanding, may be reaſonably attacked by warm fomentations, in order to diſperſe or reſolve the cauſe. The ſame is alſo recommended by Trallian [s]; but he adviſes us to have immediate recourſe to depletion, if the pain does not yield to the foment, or if it be rather increaſed thereby. In the beginning of a ſlight pleuriſy, without any violent fever, or much hindrance to the breathing, this is a remedy that may be ſeaſonably tried, becauſe at that time we may reaſonably hope for a mild reſolution of the malady (§. 887.) or at leaſt for a happy and ſpeedy cure of it by a concoction and excretion now attending; but where the pleuriſy is dry and violent, one ought to be mindful of the good

[p] Ibidem. [q] De Pleuritide, ægrot. 7. p. 99. [r] De Victu Acutor. Charter. Tom. XI. p. 36. [s] Lib. VI. cap. 1. p. 268.

good caution given by Aretæus, in the head of the chapter where he treats of the cure of this malady: "No circumſtance can plead for delays and trifling "practices in the cure of pleuritic patients, but power-"ful remedies are neceſſary[t]." Therefore he is for having a vein opened on the ſame day with the malady, unleſs it ariſes from over-eating or drinking; in which caſe he prefers one day's abſtinence as a preparative.

Let blood, therefore, be drawn as ſoon as poſſible, and in a quantity ſufficiently large; yet not neglecting to regard the diverſity of age and ſtrength in different patients. And it is here of conſiderable benefit for the blood to flow in a quick ſtream, from an ample orifice in a large vein; for which reaſon it is better to bleed in the arm than in the hand or cubit: for here the blood-letting is intended not only to leſſen the quantity, but to cauſe a ſudden depletion of the obſtructed arteries, while the arterial blood urges leſs upon them, whereby contracting they may repel back the obſtructing particles to their larger trunks (for which conſult §. 141, nº 1.), and thus remove the inflammation. To forward this intention, alſo, the painful ſide is to be gently rubbed and fomented while the blood continues flowing from the vein: but when ſo large and ſudden a blood-letting is required, it will be beſt to bleed the patient lying ſupine in the bed, whereby he will be better enabled to bear the diſcharge without fainting, than if he was to ſit in an erect poſture.

Sometimes it happens in a pleuriſy, that for the violence of the pain the breaſt can by no means be dilated or moved: whence the lungs tranſmit but very little blood; for which reaſon the large veins are indeed very full or turgid; but the aorta, receiving but little blood, does not preſs forward that of the veins with any great force, ſo that upon opening a vein there is often but little blood flows out: But ſo ſoon as the patient makes a greater expanſion of his lungs by ſighing, or ſhocks them by coughing, the blood comes

[t] De Curatione Morbor. Acutor. lib. i. cap. 10. p. 89.

comes out impetuouſly. This Tulpius [u] remarked in a pleuritic woman; and makes it an admonition to phyſicians, that in ſuch caſes they may excite the patient to cough. But as theſe patients have often the pain ſo ſevere, that the leaſt dilatation of the breaſt throws them into convulſions, and in ſuch it will be in vain for the phyſician to perſuade a cough or a ſtronger breathing; it will be beſt, in ſuch a caſe, to give them a pinch of ſome ſternutatory, or a ſpoonful of ſour wine or hot vinegar to drink under the name of a cordial, whereby an involuntary cough may be excited, which may ſuddenly remove the pain, or at leaſt greatly abate it.

The quantity of blood to be drawn is various, according to the difference of age and ſtrength in the patient. Sydenham [w] uſually ordered adults to be bled to about twelve ounces at a time; although a larger quantity may be often very ſafely taken, more eſpecially at the firſt venæſection. It is beſt for the phyſician to be preſent, and to determine the quantity as circumſtances ſhall direct. In general, it is uſual to continue the diſcharge until the patient can either breathe more freely, or feels a conſiderable abatement of the pain: or, if in the worſt kind of pleuriſy the pain does not abate (as rarely happens, unleſs the operation has been too long neglected in the malady), we ſuffer the evacuation to go on as far as prudence will permit, until the ſigns of a fainting approach; ſuch as a ſinking of the pulſe, a ſweat in little drops upon the fore-head, with a paleneſs of the face, eyes, and lips; on perceiving which, the vein is to be directly cloſed. Aretæus [x] here particularly cautions to avoid a fainting, leſt a peripneumony ſhould follow: for while the heart ſtops in a fainting, the blood in the right ſinus, auricle, and ventricle, often ſtagnates for ſome minutes; and being in this inflammatory malady greatly inclined to inſpiſſation and concretion, upon which it will in ſome degree enter before the patient can be raiſed from his fainting, it may thence heſitate and

[u] Obſervat. Medicar. lib. ii. cap. 3. [w] Sect. vi. cap. 2. p. 335.
[x] De Curatione Morbor. Acutor. lib. i. cap. 10. p. 90.

and become impervious in the ſmaller veſſels of the lungs through which it ought to paſs, and by that means cauſe a peripneumony, which is a malady much more dangerous than a pleuriſy itſelf.

But it frequently happens, that the pleuritic pain, abated by the firſt blood-letting, at length returns again with equal ſeverity; and then the blood-letting is to be repeated, and this as often as the urgency of the pain and the hindrance of the reſpiration ſhall demand. Accordingly Sydenham [y] has obſerved, that a confirmed pleuriſy, in adults, is rarely cured with diſcharges of blood under forty ounces; although, in children, the opening of a vein once or twice will be ſufficient: even ſometimes the malady is ſo ſtubborn as to require a loſs of blood greatly exceeding forty ounces, taken frequently, or by repeated venæſections. Great numbers of obſervations made by the beſt practical phyſicians bear witneſs to this truth. In a child-bed woman, ſeized with a violent pleuriſy, or pain of the ſide, on the eighth day after her delivery, Tulpius [z] found it neceſſary to open a vein thrice in the foot, and five times in the arm, before he could conquer the ſtubborn malady; yet the patient eſcaped out of all the dangers, although ſhe had to ſupport an exceſſive flux or purging, beſides the repeated bleedings. A caſe almoſt of the ſame kind is alſo given us by Le Motte [a].

Sydenham [b] placed the ſole cure of a pleuriſy in repeated blood-letting, whenever the ſymptoms continued or returned; and aſſures us that he never obſerved any miſchief enſue from thoſe blood-lettings, which to the unſkilful ſeemed too copious. This applauſe of the lancet encouraged ſome to perſiſt ſtill in repeated venæſections, if there remained the leaſt of the former pains, until they had quite exhauſted their patients; who therefore never recovered, or at leaſt fell afterwards into ſome languiſhing chronical diſtemper, more eſpecially a dropſy. But ſuch underſtood not

[y] Sect. vi. cap. 2. p. 336. [z] Obſervat. Medic. lib. ii. cap. 2.
[a] Traite des accouchemens, liv. ii. cap. 21. p. 224. [b] Sect. vi. cap. 2. p. 338.

not the intention of Sydenham rightly: for his advice expreſsly is, to repeat the blood-letting "when the "pain and other ſymptoms are very ſevere[c]." For altho' ſome pain and a ſlight fever may remain, yet, if the breathing be not thereby very conſiderably hindered, nor any dangerous event threatened (ſee §. 609.) it is beſt to weaken the powers no further by this evacuation, as they are required to digeſt or throw off what yet remains of the malady.

In moſt inflammatory diſeaſes, and eſpecially in a pleuriſy, when the blood drawn from a vein has parted the ſerum from its cake of red cruor; on the upper part of the laſt is obſerved a white or livid cruſt or ſkin, exceeding tough, and ſometimes ſeveral lines in thickneſs, difficultly cut through even by a raſor, (concerning which you may conſult what has been ſaid at §. 384.) and ſo long as this cruſt or ſkin appears upon the cake of the evaſated blood, ſo long blood-letting is allowed by phyſicians to be uſeful in this malady: but it is an admonition given us by Sydenham (which we mentioned at §. 384.) that the formation of this ſkin in the blood of pleuritic patients is frequently hindered, if the ſtream does not flow briſkly and freely from the opened vein, but runs ſlowly trickling over the ſkin of the arm; in which caſe this ſign becomes fallacious. But the celebrated Triller[d] aſſures us, that he has found this whitiſh pleuritic cruſt upon the blood, even when it has dropped very ſlowly from the vein, in a perpendicular direction. I remember myſelf alſo to have ſeen the like, as well in pleuritic patients, as in thoſe who, being well, bled only to preſerve preſent health. But there are more certain ſigns to determine the utility of further blood-letting, or the diſuſe of it, to be had from the ſeverity or abatement of the pain, in conſideration with the patient's ſtrength, and the urgency of the other ſymptoms: even when the patient is extremely weak, if all the ſymptoms are notwithſtanding grown again to a conſiderable degree of violence, there is no other help remains but to repeat the blood-letting. There is a remarkable

[c] Ibidem, p. 336. [d] De Pleuritide, p. 27, 28.

able case given us by Triller [e], that shews how successful the courageous efforts of a physician may often be in circumstances seemingly to be despaired of. In a robust youth addicted to hunting, under a most severe pleurisy, after two large blood-lettings, the disease seemed to change for the better; but on the fifth day all the symptoms of the malady returned with great violence, so that, in spite of clysters and vesicatories, the patient seemed to be at the point of expiring. A large orifice was made in the veins of both feet, now grown so cold that though they were fomented with water not a drop of blood came: upon which water so hot was continued to be poured upon them as fetched off the cuticle; and then the veins bled plentifully enough, and to so good purpose that the half-dead patient revived, and was afterwards happily cured of his malady.

Helmont [f] indeed madly cries out in this point, that by the lancet the physician makes a bloody sacrifice of the patient to Moloch; and therefore absolutely condemns blood-letting in this malady. His imaginary hostile acid, which he calls a thorn fixed in the pleura and intercostal spaces, he says may be extracted or obtunded without spilling the vital blood; and this miracle he thinks himself able to perform by a little powder of stag or bull's pizzle, juice of wild succory, wild-poppy-flowers, and other trifles: But his most noble antipleuritic remedy was dried goat's blood, obtained in the following manner: The hind feet and horns being tied together, the testicles were cut off, and the blood flowing from the wound was collected until the animal was exhausted; this dried, and reduced with great labour to a fine powder, made his grand antipleuritic medicine. However he seems to have himself confided in what he so industriously recommended to others; for in the same chapter he describes his own case, by which it appears that his pleurisy was not resolved by these medicines, but rather ended in a dangerous suppuration. It also appears from the preface

[e] De Pleuritide, p. 68.

[f] Videatur Capitulum, quod inscribitur *Pleura furens*, p. 217, &c.

face which his ſon Franciſcus Mercurius van Helmont prefixed to the works of his father, that he had been twice diſeaſed with a pleuriſy; and that towards the cloſe of his life he had ſuch bad lungs as to be out of breath, on writing a ſhort letter, or ſpeaking ſentences of any length. However, he has unluckily had many followers in his bad notions, to the misfortune of themſelves and others: and even at this day ſpecifical antipleuritic medicines of the ſame kind are boaſtingly ſold abroad; and which, as they make no diſturbance in the body, may be indulged to the patient, provided other more efficacious means are not neglected by them.

It is no objection to this method of cure in pleuriſies, that there are ſometimes caſes where blood-letting has not been found profitable, although the ſymptoms of a pleuriſy attended. For thus in the Edinburgh Eſſays[g], it is recorded, that in the month of February 1736, a bad ſort of pleuriſies prevailed in that city, in which it was found that blood-letting did more harm than good. But if we conſider the ſymptoms which are there recounted, it will appear, that that epidemical malady was different from a true pleuriſy: For a bilious vomiting attended from the beginning, and a pricking pain about the loweſt ribs only ſuccceded after the two firſt days, with a difficulty of breathing, and a ſlight cough: the pulſe too was neither full nor frequent; and the blood let out appeared browniſh, yelloviſh, or greeniſh, and hardly coagulated.

Nor was Sydenham any ſtranger to ſeeming pleuriſies of that kind, as he was ſo well ſkilled in detecting the various conſtitutions or natures of epidemical maladies. We obſerved before, §. 880, in ſpeaking of a ſymptomatical pleuriſy, that this incomparable phyſician admoniſhed us, that often epidemical fevers, by ſome ſudden and evident change in the qualities of the air, would make a copious depoſition of the morbific matter upon the lungs or pleura, although the fever itſelf continued to keep its primitive diſpoſition: therefore

[g] Vol. v. Part. i. p. 32, 33.

therefore he expreſsly adviſes, "But if the fever "(ſuch as is epidemical) refuſes to be relieved by re- "peated blood-letting, neither will that diſcharge be "of ſervice (it will even be prejudicial) in a pleuriſy, "which riſes or falls with the fever itſelf[h]." There is alſo a memorable text of Hippocrates which confirms this admonition: for he ſays, That *pains of the ſide that are moderate in fevers, without the eminent ſigns, are hurt by blood-letting; more eſpecially if there be an averſion to food, and a ſwelling of the hypochondrium or liver*[i]. Duretus[k] indeed reads this text otherwiſe, making (απυρετοισιν for εν πυρετοισιν) it *without fevers*, inſtead of *in fevers;* but this change of the text that excellent expoſitor ſeems to have made arbitrarily only, ſince he alleges no manuſcript or copy for ſuch a reading. Now this paſſage beautifully accords with the obſervations made by modern phyſicians upon ſymptomatical pleuriſies; for in ſuch the pain is not ſo very violent, whence Hippocrates names it (ισχνος) *thin* or *ſmall*. And he adds, that thoſe pains are (ασημα) without the other ſigns that attend a true pleuriſy. Now in that ſymptomatical pleuriſy which was obſerved in Edinburgh, a ſickneſs at the ſtomach attended, which got conſiderable relief from a gentle vomit. In ſhort, we not only often obſerve difficult caſes of practice remarked by Hippocrates in his Coan Preſages, but we alſo there frequently find advices that are very ſalutary towards their cure.

It was formerly a very warm controverſy among phyſicians, Whether in a pleuriſy the vein ought to be opened in the arm of the affected, or of the oppoſite ſide. Both opinions were backed by many authorities. Hippocrates, Galen, Celſus, and others, ſeem to declare for the arm of the affected ſide; while Aetæus, Aëtius, and Cœlius Aurelianus, are for that of the oppoſite ſide. From the eighth down to the ſixteenth age, and lower, for the ſpace of above eight hundred years, it was almoſt the univerſal practice of phyſicians,

[h] Sect. v. cap. 5. p. 310.

[i] Dolores circa latus in febribus, tenuiter conſiſtentes, abſque ſignis, quibus venae ſectio, et ſi cibum averſetur, et hypochondrium elevatum ſit. Coac. Prænot. nº 491. Charter. Tom. VIII. p. 880. [k] In Coac. p. 387.

phyſicians, in a pleuriſy, to bleed in the arm oppoſite to the painful ſide: but after the works of Galen and Hippocrates began to be revived in the beginning of the ſixteenth age, and to gain the preference over the Arabian writers, becauſe the then lately diſcovered art of printing rendered thoſe medical treaſures more eaſily procurable to all the ſtudious, the face of medicine began to change, by the compariſon which learned profeſſors made betwixt the notions of the latter and the more eſtabliſhed maxims of the former; to which if they did not appear conformable, they were rejected. Peter Briſſot, created doctor of medicine by the univerſity of Paris in the year 1514, began there publicly to expound ſome of the books of Galen, and to explode thoſe of the Arabians. This phyſician, finding that the method of bleeding in the arm of the affected ſide was recommended by Galen, ventured to follow him, in oppoſition to the general practice which had long prevailed of bleeding in the contrary ſide; and his method happily ſucceeding in an epidemic pleuriſy that ſpread in France, at the beginning of the ſixteenth age, brought over many eminent phyſicians in like manner to adopt it. The practice was ſoon after carried into Portugal, and there put to the trial; but with great oppoſition from the firſt phyſician of his Portugueſe majeſty, till at length the affair was debated in the univerſity of Salamanca, and a decree iſſued, that no phyſician ſhould preſume to bleed directly in the arm of the affected ſide; but the decree was afterwards mitigated. Even importunate ſolicitations had almoſt moved Charles V. emperor and king of Spain, to proſcribe, by public authority, this innovation of Briſſot's. There is an extraordinary tract, by Renatus Moreau[1], which deſerves to be read, in which the opinions of the principal authors that have been given upon this matter, are ranked in chronological order, together with doctor Briſſot's life.

After this it ſeems to have been left indifferently to the choice of every one, either to follow the practice of Hippocrates and Galen, or that of the Arabians laſt

[1] De miſſione ſanguinis in Pleuritide. Paris 1630. et Halae 1742.

aſt mentioned; and when the circulation was once nown, moſt were of opinion it mattered not from which arm the blood was drawn, provided it was taen in a ſufficient quantity from a large orifice, and in he beginning of the diſeaſe. However, the matter as been of late again diſputed betwixt two eminent hyſicians of the preſent age at Paris, Sylva and Chevaier. But ſince, to determine in controverſies of this ind, a careful obſervation of the good or bad events hat follow in the cure of diſeaſes, is of great moment, would thence ſeem that the opinion is ſafeſt which dviſeth bleeding from the arm of the affected ſide. riſſot's ſucceſs thereby, in the cure of an epidemic leuriſy [m], while moſt of thoſe who bled in the oppote arm either died or languiſhed long under their alady, was a confirmation to his opinion. Sydenam [n] bled his pleuritic patients, as ſoon as he was alled to them, from the arm of the affected ſide; but hen he afterwards repeated his veneſections, he akes no mention of the part from whence the blood as drawn. Hildanus [o] confeſſes that he ſeldom or ever obſerved the deſired ſucceſs from bleeding in he oppoſite ſide to the pleuriſy. The ſame opinion is alſo of late confirmed by the obſervations of the learnd Triller [p], particularly as to the firſt blood-letting; or the ſecond he rather chuſes to have performed in he foot of the ſame ſide; and then in the other foot the oppoſite ſide, if there ſhould be occaſion for ing the lancet a third or fourth time; but he juſtly dviſes the firſt blood-letting to be of all the moſt coous. But this whole affair is very well confirmed a remarkable inſtance, wherein veins were opened different parts, in two youths who led the ſame urſe of life, and were ſeized with a pleuriſy at the me point of time, and from the ſame cauſes [q]. He at was bled in the arm of the affected ſide, altho' lay badly delirious, ſoon came to his ſenſes, and d no further need of bleeding; but the other, who

[m] Ibid. p. 120. [n] Sect. vi. cap. 3. p. 335. [o] Obſerva-
drurg. cent. v. Obſ. 30. p. 410.
[p] De Pleuritide, p. 30.
[q] Ibid. p. 80.

had a larger quantity of blood taken from the foot of the affected ſide, had no relief by it; whence it was neceſſary to open a vein again on the day following, which was done in the arm of the affected ſide, by which all the ſymptoms were immediately abated, and the patient afterwards recovered from a dangerous pleuriſy by a happy criſis, only two days later than the former.

We obſerved a little before, that ſometimes epidemical diſeaſes ſpread themſelves which had ſome of the appearances of a pleuriſy, although they were not true or genuine, but ſymptomatical pleuriſies only, which received no benefit from blood-letting, or at leaſt ſeldom ever ſuffered a ſecond bleeding without manifeſt damage; and yet that this is no reaſon for condemning veneſection in a true pleuriſy. Now all this may be certainly ſaid of the malignant and contagious pleuriſy which is mentioned in an epiſtle from Geſner [r] to Crato; for he remarks, that in this particular kind of pleuriſy, bleeding from the arm never was ſucceſsful, but that blood was here happily enough taken from the ankles. It is alſo obſervable, that, in the ſame epiſtle, Geſner owns himſelf not yet acquainted with the method proper for treating this pleuriſy; and in another [s], written three months after the former, he confeſſes he had made very few remarks in the cure of this diſtemper, becauſe he had been called to but few patients, and the diſeaſe itſelf went off in the ſpring ſeaſon.

2.] The moſt ancient method of treating pleuriſies ſeems to have conſiſted in the application of external remedies to the painful ſide; for before phyſic was reduced to the form of a profeſſion, every man endeavoured to relieve himſelf from pains by various trials, or applied ſomething that his neighbours had found uſeful in a like complaint [t]. But nothing ſeems more readily or eaſily applicable, than ſuch external remedies; and we accordingly meet with the moſt ancient accounts of ſuch in uſe. Thus in a marble table found in

[r] Epiſt. p. 19, 20. [s] Ibidem, p. 21. [t] Vid. Prolegomena Inſtitut. Boerhaave.

in the temple of Æſculapius at Rome, in the little iſland of the Tiber, among other matters we read a Greek inſcription concerning one Lucius [u], who being deſpaired of in a pleuriſy by all perſons, the good Æſculapius gave him an oracle, to take aſhes from the altar, mix them with wine, and apply them to the painful ſide: by which he is there ſaid to have been cured, rendering afterwards public thanks to that deity. It is well known by ancient hiſtory, that the crafty prieſts, in order to give a greater reputation to their temples and idols, preſcribed remedies to the credulous people, as if they came revealed from an oracle or deity of the temple.

This was probably the reaſon why Hippocrates [w], who collected thoſe ancient records for his own uſe, began the cure of pains in the ſide by the application of warm foments, even before he proceeded to any blood-letting. For he applied to the painful ſide hot water in a bladder, or ſome other veſſel, or elſe a ſponge dipped in hot water: and even more ſharp medicines, that had a great power of diſſolving, he uſed for the ſame purpoſe; namely, little bags full of bran, barley, or vetch-meal, moiſtened with ſtrong vinegar, and applied hot. It is alſo evident from the hiſtory of Anaxion, cited from Hippocrates juſt before in this aphoriſm, that he in vain attempted the cure of a dry pleuriſy by warm foments: therefore he prudently adviſes [x], "If "the pain goes not off by foments, continue not long "to uſe hot applications; for the heat dries up the "lungs, and cauſes a ſuppuration." This advice he gives when a more violent ſort of pleuriſy could not be reſolved by theſe foments only.

Trallian [y] alſo attempts the cure of a pleuriſy by foments, and hot bags, applied to the ſide; but if the pain increaſed, he without further delay proceeded to evacuation. But the method of Aretæus is ſtill much ſafer, being that which all ſkilful phyſicians now practiſe; namely, he orders [z] to begin the cure by open-

[u] Mercur. de arte gymnaſt. lib. i. cap. 1. p. 3.
[w] De Victu Acutor. Charter. Tom. XI. p. 36, &c.
[x] Ibidem, p. 41.
[y] Lib. vi. cap. 1. p. 168.
[z] De Cura Morbor. Acutor. lib. i. cap. 10. p. 89, 90.

ing a vein without delay, and then he applies the external remedies aforesaid. How useful those remedies are in resolving an inflammation, was declared before, at §. 398, nº 3. where we treated of the cure of Inflammation. Now, as it was shewn at §. 386, that one might reasonably expect the cure of an inflammation by resolution, if the circulating humours were mild and the vessels pervious or moveable; it is thence easily apparent, that these applications ought all of them to be warm, moist, and endowed with a power of relaxing: there are various forms of such medicines in our Author's Materia Medica corresponding to the number of this aphorism. I have myself frequently used a solution of Venice soap, in equal parts of warm water and new milk; or I dissolved the soap in an emollient decoction, half an ounce to each pound of the liquor: flannels being soaked in this solution, and laid upon the side, hot tiles were placed over them, to keep the foments from growing cold: but in the night-time, that the frequent renewal of the foments might not be troublesome, I ordered the side to be first anointed with *ung. althææ*, and then to be covered with a melilot plaster.

But these external applications of the most emollient remedies, are not only of use to the happy resolving of the inflammation; but likewise, when the malady comes too late to be so treated, or when the more malignant disposition of it inclines to a suppuration, the intercostal spaces are then so relaxed by these applications, that one may hope for a solicitation of the matter outwardly, so as to hinder a dangerous empyema.

3.] Concerning these alterants we treated before in the general cure of Inflammation; as also in the cure of a peripneumony, at §. 854, nº 3. A simple decoction of barley, with oxymel and nitre, is often sufficient here, since this includes all the qualities necessary towards a cure: for it dilutes, by being watery; relaxes and eases, by the mealy substance of the barley that is intermixed with the water; while the honey and vinegar very well dissolve inflammatory size or spissitude;

ſpiſſitude; as does likewiſe the nitre, which at the ſame time abates the too great heat of acute diſeaſes, by leſſening the denſity of the humours, (ſee §. 692). In the Materia Medica, at the preſent number, are given other forms for the ſame purpoſe. Nor will it be prejudicial to intermix with theſe ſome of the milder anodynes or paregorics, more eſpecially if there is great reſtleſſneſs and troubleſome watchings: the wild-poppy flowers, and all officinal medicines thence prepared, may be here ſafely uſed; and with ſo good an effect, that many phyſicians have from thence been induced to believe the poppy-flowers a ſpecifical anti-pleuritic medicine, by which alone this malady might be cured. The ſyrup of white poppy heads, prepared by boiling in water, has been likewiſe of ſervice, after blood-letting and other ſuitable remedies have gone before. But the ſtronger narcotics, which ſtupefy the ſenſe of pain, while the deſtructive cauſes continue acting, appear not ſo ſafe. This method of uſing anodynes is alſo recommended in a pleuriſy by Trallian [a].

The preceding medicines are to be taken to a great quantity in the whole, but in ſmall doſes at a time, as three or four ounces of the barley drink or decoction, warm, every half hour; for the drinking of any liquor cold is hurtful to pleuritic patients, as Aretæus hath juſtly remarked [b]. Moreover, Baglivi [c] aſſures us, that the drinking ſuch a ptiſan extremely hot, was a ſecret or favourite medicine with him in a pleuriſy, as well as in other maladies of the breaſt which required reſolvents; and adds, that he has ſeen his patients, almoſt livid with the degree of ſuffocation, quickly freed from their oppreſſion, by frequent draughts of pectoral decoction, ſupped almoſt ſcalding hot.

But to determine the ſaid medicines towards the affected ſide, thoſe foments, warm bathings, *&c.* applied to the ſeat of the pain, as were lately recommended, will be very conducive; for we proved at 134, that all thoſe things, which by relaxing the veſſels leſſen the reſiſtance to the juices impelled to

[a] Lib. vi. cap. 1. p. 271. [b] De Curat. Morbor. Acut. lib. i. cap. 10. p. 93. [c] Prax. Med. lib. i. cap. 9. p. 35.

any part of the body, do direct or determine the efficacy of medicines inwardly taken towards the same part.

We before admonished, under the present aphorism, that the violence of this malady might be indeed abated by blood-letting, with other medicines; but that a violent pleurisy could seldom or never be cured without a discharge of the matter of the disease first concocted or digested, or else translated to some other part. The various causes and modes of the cure of pleurisies by such concoction and excretion of the morbific cause or matter were before described §. 888; and it appeared from §. 889, that a different method of cure was then required, according as the matter of the distemper endeavoured to go off by one emunctory or the other: therefore it is justly added in the text, "that "the things taken are to be varied according to the "changes of the symptoms."

But such of these are always to be chosen as are averse to putrefaction.] For in a pleurisy there is an acute continual fever (§. 875.) by which all the humours are inclined to corruption, as we demonstrated before in the history of fevers. Almost all the medicines which the ancient physicians used for this malady, were either acid, or naturally inclined to turn acid. Barley-ptisan, vinegar, honey, and mead diluted, have been recommended by them; which still continue to be used with good success in this malady by physicians of the present day, while they justly reject the volatile salts that were so much applauded by Sylvius; as also from things alkaline or opposite to acidity, which Helmont makes the cause of a pleurisy, namely, alkaline salts to correct, or absorbents to obtund; which, if they do no harm, are at least of no use to the cure of the pleurisy.

4.] In every fever to be cured, the life and powers of the patient are to be provided for by suitable drinks and fluid nourishments, as we shewed before at §. 599, *et seq.* in the general cure of fevers: But since a pleurisy is seldom entirely terminated before the seventh day, but often runs to a much longer extent, it is therefore evident enough, that the vital powers are to be

be here ſuſtained by ſuitable nouriſhments. But among theſe, ſuch are the moſt convenient as are the moſt eaſily digeſted or changed by the patient and by a body weakened with profuſe evacuations. Hippocrates[d] gave only barley drink in acute diſeaſes, more eſpecially in a pleuriſy; for he dared not to truſt the patient with the whole ptiſan or gruel, without ſtraining off the barley, ſo long as the pleuriſy continued crude or without ſigns of concoction, and even then he only allowed the thin or dilute part of the gruel. Afterwards, when the patient ſeemed to be out of danger, and the diſeaſe abating[e], he then gave them a ſmall quantity of the thin cream of barley-ptiſan mixed with honey. Again, when the expectoration became eaſy, and the breathing free, without any pain left in the ſide, he then gave a larger proportion, and of a thicker cream, from barley-gruel, twice in the day. Aretæus[f] likewiſe greatly extols the gruel and cream of barley in a pleuriſy, and will allow the patient no ſtronger nouriſhment; unleſs when the malady runs out to a conſiderable length of time, and ſo thin a nouriſhment appears inſufficient to ſuſtain the patient's ſtrength. Conformable to the ſame practice, Sydenham[g] always prohibited fleſh, and fleſh-broths, however ſmall, in pleuriſies; and allowed only barley or oat gruels, and panada: and after all the ſymptoms were grown moderate or inconſiderable, he ſtill interdicted his patients, for many days after, from the uſe of all ſpirituous drinks and groſſer aliments[h].

5.] We have ſeen, that a pleuriſy is an inflammatory malady, with an acute fever; and therefore every thing that will diſſipate the watery parts of the blood, increaſe its denſity and febrile motion or heat, are here highly prejudicial. Hence the unſkilful uſed to commit great errors in this malady, when, pleuriſies being frequent in ſevere ſeaſons, they have adminiſtered the moſt heating medicines, and imagined they ſhould be able to cure the diſtemper by cauſing them to

d De Victu Acutor. Charter. Tom. XI. p 23,—29. e Ibid. p. 160. f De Curat. Morbor. Acutor. lib. i. cap. 10. p. 90.
g Sect. vi. cap. 3. p. 335, 336. h Ibidem, p. 337.

to force out a ſweat. Sydenham [i] obſerves, that other fevers change into a pleuriſy when they are treated in the beginning with medicines that are too heating, and laments that ladies of quality were ſo conceitedly more forward to furniſh the poor with ſuch medicines, rather than beſtow their charities in food and neceſſaries. But if thus a perverſe treatment can change another malady into a pleuriſy, it is eaſily apparent that a pleuriſy once formed, may, from a like cauſe, be rendered much worſe. Thus I ſaw a pleuriſy fatal on the ſecond day, becauſe an officious woman, ſuppoſing it to be a windy pain, or from flatulencies, adminiſtered repeated draughts of ſpirits diſtilled from lovage-ſeeds. In another ſtrong muſcular man, blood-letting and other remedies having been ſeaſonably uſed, by the fifth day the malady was changed for the better, and there ſeemed to be hopes of a happy cure; but, by his own advice, the ſame evening, very hot tiles were applied to his breaſt, which forced a profuſe ſweat, which the unfortunate patient looked upon as a good ſign, but the next morning he expired.

From this, and other caſes of the like kind that have been met with in my practice, I have been taught the juſtneſs of Sydenham's [k] admonition, in cautioning us from keeping pleuritic patients too much heated; for which reaſon he left ſuch patients at liberty to be taken out of their bed for a few hours each day, if their ſtrength would allow it. He has even obſerved, that copious blood-letting, and other cooling medicines, would often be of no benefit if the patients were kept always confined to their bed, more eſpecially if they were much loaded with bed-clothes.

If, then, every thing that irritates, heats, and accelerates the courſe of the blood, is to be eſteemed miſchievous in a pleuriſy, what are we to think of bliſters prepared from cantharides? Baglivi [l] recommends them as a capital remedy, when at any time of the diſeaſe, either before or after blood-letting, a ſuffocating difficulty attended in the breathing, with a ſuppreſſion

[i] Ibid. p. 332. [k] Ibidem, p. 337. [l] Prax. Med. lib. i. cap. 9. p. 37. et in Diſſertatione de uſu et abuſu veſicant. cap. 3. p. 656.

uppreſſion of the ſpitting: for then he immediately ordered two bliſters to the legs; and aſſures us, that, by this treatment, out of an hundred patients very few were loſt, in an epidemical pleuriſy that ſpread itſelf at Rome in the cloſe of the laſt century, from a winter intenſely and unuſually cold. He obſerved likewiſe, at the ſame time, that, by this practice, the diarrhœa, that accompanied thoſe dangerous pleuriſies, either wholly ceaſed, or greatly abated. The celebrated Triller [m] alſo obſerved, that in a wonderful caſe of a pleuritic woman who was almoſt exhauſted with a ſtubborn flux from the bowels, lay ſenſeleſs with a rattling in her throat, and had a livid ſwelled viſage like thoſe who are ſtrangled with a cord, ſmall trembling and intermitting pulſe, the urine and ſtools flowing involuntarily; yet ſhe was recovered, even from the jaws of death, after two large veſicatories, prepared of the powder of cantharides, were applied to the calves of the legs: at the ſame time, alſo, the dangerous flux from the bowels ceaſed.

Now, although it might ſeem at firſt view, from Baglivi's writings, that bliſters may be ſafely applied in the beginning of a pleuriſy, even before a vein has been opened; yet, from what follows in the ſame author, it appears that he uſed blood-letting before the bliſters were applied; for thus he writes [n]: "Obſerve, that the foreſaid pleuritic patients, in which we remarked theſe advantages from bliſters, were not purged in the beginning of the malady, as is done by ſome practitioners; but, after ſeaſonable blood-lettings, only pectoral decoctions, *&c.* were preſcribed." Triller [o] adviſes the application of bliſters to the legs and thighs, when, after repeated blood-lettings, the difficulty of breathing ſtill remains conſiderable, or even increaſes: however, he freely confeſſes that the uſe of bliſters did not always ſucceed as he wiſhed.

Almoſt the ſame effects from the uſe of bliſters in pleuriſies we read in the Edinburgh Eſſays [p]: for in an

[m] De Pleuritide, p. 76. [n] Diſſertat. de uſu et abuſu veſicantium, cap. 3. p. 656. [o] De Pleuritide, p. 54. [p] Vol. I., p. 42.

an epidemical pleurisy that spread in the spring of the year 1732, when the symptoms seemed to require repeated blood-letting, the pulse thereby became so much depressed, that it was hardly recoverable to its former and natural strength, without blisters were immediately applied; which were very often of service, as sometimes after the use of them a sweat ensued, that carried off the epidemic malady, when it continued long and copious; otherwise the patients had to grapple with the pain, anguish, and oppression, till they sunk under them.

It appears from the experiments of Baglivi, made upon living animals, as well as by mixing powder of cantharides with the blood and its serum, that these insects have the power of dissolving the texture of our juices; but they also dispose our humours, being once dissolved, towards a putrefaction[q].

And therefore it may seem from thence conclusive, that the use of cantharides is not at all safe, where there are signs of a violent fever, great heat, and a dangerous putrefaction. Thus Baglivi[r] gives us the history of a patient of a thin bilious habit, who lay ill of an acute pleurisy, with a dry cough, and most ardent heat of the fever, a hard high pulse, watchings, thirst, thick and very red urines, *&c.* to which patients six blisters were applied on the thirteenth day of the disease; but the day following a delirium came on, a suppression of the spitting, a tremor and epileptic motions, *&c.* and he expired on the twentieth day.

But when the violence of the fever has been first greatly abated by the necessary blood-letting, and there are no apparent signs of putrefaction in the urine and intestinal fæces, while the pain still continues, or the lungs begin to be oppressed; then blisters seem to promise considerable benefit. In such a case I have seen a blister applied to the painful side, and have sometimes practised the same myself with very good success.

§. 891. WHICH remedies (§. 890.) and how long they are to be continued or repeated,

[q] Dissertat. du usu et abusu vesicant. cap. 1. p. 648. [r] Ibidem, p. 649.

epeated, are taught by the obſtinacy, or the batement, of the diſeaſe, and by its changes or riſes, (§. 888.)

Two events were here principally to be feared; amely, the ending of the pleuriſy, as an inflamma-on, by a ſuppuration, which is dangerous in theſe arts; or elſe by a gangrene, which is almoſt always tal; to which add, a ſtuffing up of the lungs with ndenſed blood, from the hindrance of the reſpira-on ariſing from the ſeverity of the pain. To pre-nt theſe dangerous conſequences, a copious and re-eated blood-letting, with fomentations, and other medies, were directed to be uſed: but at the ſame me, as we obſerved at the firſt number of the laſt a-noriſm, care muſt be taken not to over-weaken the atient, by blood-lettings more eſpecially, leſt the pow-s ſhould be inſufficient to digeſt and expel the matter the diſtemper; from whence afterwards languiſhing chronical maladies might enſue, that are very diffi-ultly curable. Therefore, although ſome pain may ill be left, yet if the breathing be tolerably free, the ulſe little or nothing hard, and the circulation has not exceſſive celerity, the malady will be ſubdued by the e of foments, with diluents and attenuants drank entifully: for the happineſs of a cure in ſuch caſes es here, that you keep the continual fever which at-nds a pleuriſy within ſo moderate a degree of vio-nce, as will render it neither deſtructive, nor ſluggiſh-inſufficient. But concerning this ſalutary degree, nd the ſigns by which one may diſtinguiſh it, we eated more largely in the commentaries to §. 609.

It was proved at §. 610, that cooling-clyſters are to e ranked among thoſe remedies which leſſen the vio-nce of the fever; and yet Sydenham [s] either ſeldom ſed ſuch clyſters, or elſe interpoſed them at very ng intervals betwixt the repeated blood-lettings; nd then only uſed the more ſimple, ſuch as ſugar diſ-olved in milk: for he deſervedly placed his chief con-dence of a cure in blood-letting; and therefore ſel-dom

[s] Sect. vi. cap. 3. p. 266.

dom uſed clyſters, that his patients might not be over weakened; as alſo that there might be no hazard of a flux or purging from the bowels, excited by the ſharpneſs of the clyſters; which flux is in the beginning always a diſcharge ſymptomatical and pernicious. When once the violence of the malady abates, then the inflammatory or concreting matter of the diſtemper begins gradually to diſſolve, and ſeeks itſelf a diſcharge by various outlets from the body: therefore to this diſcharge the phyſician ought to be attentive, leſt unſeaſonable remedies ſhould diſturb the concoction and expulſion of the morbific matter, of which we treated at §. 888.

When once the diſtemper is over, great care ſhould be taken that the recovering patient be not allowed to fill too faſt with nouriſhment: for often in this malady the danger of death is not to be avoided but by conſiderable loſſes of blood; and we proved before, at §. 25, that a loſs of the healthy indigenous humours hindered the aſſimilation of the ingeſted nouriſhment into the nature of healthy vital juices: therefore it is to be feared that a ſudden repletion with groſs or unaſſimilated chyle might obſtruct the the lungs, and cauſe a dangerous return of the malady. This is what Hippocrates prudently cautions againſt, where he treats of a pleuriſy; for he ſays, *But even after the critical excretions are ended, the ſtrength muſt be ſupported by light aliments, with reſt of body; and at the ſame time one muſt guard againſt the ſun, winds, over-feedings, aliments ſour, ſalted, fat, or ſmoked, flatulency of the bowels, laborious exerciſes, and venery; for if thus there be a relapſe of the diſeaſe, death is the conſequence* [t].

But when once the patient had recovered his ſtrength, which uſually happens in a ſhort time after a pleuriſy, Sydenham was accuſtomed to complete the cure by gentle cathartics; for by that practice, whatever remained indigeſted in the firſt paſſages during the patient's recovery, or any remains of bile, and other

[t] Poſt judicationes autem vires levibus cibis reficiendae, et quieſcendum: praeterea vitandi ſoles, venti, plenitudines, acida, ſalſa, pinguia, fumus, ventris flatus, labores, Venus: ſi enim reverſus fuerit morbus, mors ſequetur. *De Morbis, lib.* iii. *cap.* 15. *Charter. Tom. VII. p.* 592.

ther juices, thrown into the ſtomach and bowels from ny change of the habit by the malady, are expelled, which might otherwiſe be miſchievous if any longer etained in the body.

As for the boaſted antipleuritic ſpecifics, ſuch as oat's blood, raſping of ſtag's pizzle, powdered boar's eeth, or jawbone of a pikefiſh, wild poppy-flowers, nfuſion of ſtonehorſe dung, and the like; they may e granted, without danger of any miſchievous conſeuences from them, whenever the patient, or any oher phyſicians in conſultation, have a poſitive confience in them; provided, at the ſame time, there be o neglect in the uſe of thoſe more effectual remedies efore adviſed, and by which alone the cure of this angerous malady can be accompliſhed.

We have now ſeen how a pleuriſy may end in ealth, under the aſſiſtance of nature, either by a ild reſolution, or by a concoction, and excretion of he matter of the diſtemper; and beſides this we have lſo pointed out how it may be cured by art, without aving any other diſtemper after it. It now follows at we proceed to conſider a pleuriſy as it changes into other diſeaſes, or as it terminates in death; and at he ſame time alſo to point out what art can effect toards the cure of ſuch maladies as unhappily ariſe om a bad or ill-treated pleuriſy preceding.

§. 892. A PLEURISY ends in an other diſeaſe, *firſt*, When the inflamed parts are appurated. That this is *about to happen*, we now, 1. From the general ſigns of ſuppuration ut §. 387, and 402); 2. From the obſtinate conuance of the pain, cough, and fever, beyond he fourth day; 3. From the abſence of thoſe gns which denote a reſolution of the matter §. 887.) or a critical expulſion of it (§. 888.); nd, 4. From a neglect of the requiſite treatment f the malady (§. 890.)

We now come to treat of a pleuriſy, *firſt*, at it

tends to a ſuppuration: but as in this caſe the diſtemper requires a different treatment from that which gave hopes of a reſolution, therefore we ought to know by what ſigns the approach of a ſuppuration is indicated.

1.] Concerning theſe general ſigns, we before treated at the numbers cited in our text; where we conſidered the ending of a phlegmon by ſuppuration or abſceſs.

2.] For the pain that increaſes at the time of inſpiration, with the cough and fever, are the ſigns that accompany every pleuriſy; and by the ſeverity of which we judge concerning the violence of the malady. If, therefore, theſe ſigns continue obſtinate, and without abatement, the inflammatory matter will be ſo compacted or condenſed, and ſo far wedged into the narrower ends of the arteries which are the ſeat of the diſtemper, as will render it impoſſible to go off without a ſuppuration. But it muſt be remarked, that a ſuppuration is then only a certain or undoubted conſequence, when theſe ſigns hold on in the ſame degree during the whole time, or are even rather increaſed: for it often happens in a pleuriſy under cure, that all the ſymptoms abate by blood-letting and other remedies; and then, after a while, or on the next day, they return to their former, or a greater vehemency; and this they will ſometimes repeat to three or four returns ſucceſſively, ſo as to be ſtill remaining with all the ſigns of a violent pleuriſy, after the fourth day, or later: but we are not from hence to believe that in ſuch circumſtances the pleuriſy is undoubtedly ending in a ſuppuration, becauſe the pain is ſtill perceived very ſharp even after the fourth day. All practical phyſicians are acquainted with this truth; and the hiſtories of pleuritic patients, that are given us in a profeſſed treatiſe on the malady by the celebrated Triller, which we have before repeatedly commended, give evident demonſtrations of the ſame fact.

3.] For when theſe ſigns are abſent, we are ſure that the inflammatory matter continues ſtill impacted in the veſſels, whence a ſuppuration is to be feared.

Therefore

Therefore Hippocrates, treating on an Empyema, says, *But patients also become purulent (or get an empyema) in the upper venter or thorax, after a pleurisy, when that grows violent, and discharges itself neither by a spitting nor by an abscess on any of the principal days that are critical*[u]. And in another place[w] he lays down this general rule in practice, (which we mentioned before at §. 833, nº 3.) "But whoever has pains in these parts, which cease "without any discharges by spittings, purgings from "the bowels, or blood-lettings, with suitable diet and "medicines; we are to know, that those pains are a-"bout forming a suppuration." But we are to observe, that sometimes, when very stubborn, the malady runs on to a great length; and yet the parts inflamed do not form an abscess, although there are signs neither of a resolution nor of critical excretions, Such cases I have seen in my practice. The like is also evident in the history of Anaxion, given by Hippocrates[x]. For this patient, he observes, had no spitting on the first days; but he became delirious on the sixth day, and the fever was more violent on the seventh day; nor was there any abatement of the pains, but the cough and difficulty of breathing still continued to molest the patient. The pain indeed, and the danger of suffocation, were here diminished, by a large blood-letting, on the eighth day of the distemper; but a dry cough still remained, and there appeared no discharge of morbific matter. But at length, though late, the matter of the distemper made its escape from the body, at several times, and by divers outlets; till the patient was at last critically recovered, without any suppuration; which yet was to be feared, in the first part of the distemper. Therefore it is hence evident, that an absolute prognosis of an approaching suppuration cannot be immediately had, even though in the course of the

[u] Fiunt autem et superiore ventre purulenti, ex pleuritide, si vehemens fuerit, neque diebus principibus (judicatoriis) computruerit, neque per sputum rejectu fuerit. *De Morbis, lib.* i. *cap.* 7. *Charter. Tom. VII.* p. 538.

[w] In Prognosticis. Charter. Tom. VIII. p. 646. et in Coacis, nº 394. Idem, p. 874. [x] Lib. iii. Epidem. ægrot. 8. Charter. Tom. IX. p. 302.

malady there be no apparent signs of a resolution, nor any marks of a concoction and excretion of the material cause; which yet sometimes make their appearance later in the malady, and perfectly recover the patient.

4.] Namely, a neglect of blood-letting, which is so necessary in a violent pleurisy; and which being timely used, and repeated according to the urgency of symptoms, succeeds happily. Those who, following Helmont's doctrine, have endeavoured to subdue this malady by antipleuritic specifics, have sometimes rejoiced to find the fever, that before raged (in the inflammatory, and beginning of the suppuratory stages) suddenly abate, or even cease when the matter is once formed: but then they have afterwards found an empyema, succeeded with an hectic fever and a consumption; of which numbers have perished, who believed they should be cured, without blood-letting, by those boasted specifics. Sydenham[y] has also admonished us of this deceitful way of terminating a pleurisy.

§. 893. BUT that a suppuration is now *forming*, we know from the common signs, (§. 405); but more especially here from an horror, or shuddering, often returning without an apparent cause; also from the signs before given in a peripneumony (§. 834, 835): and from the same it is also discovered when actually *completed;* and sometimes it is even evacuated by spitting from the lungs.

An abscess here formed has indeed all the same signs in common with other suppurations that are made in the external parts of the body, upon which we treated at §. 405; but most of these signs cannot here be perceived, as the abscess lies concealed within the body; therefore it is a matter of importance to collect all the other signs which may help to point out a suppuration herein formed. Those unsettled shiverings which return at uncertain periods of time, afford a sign,

[y] Sect. vi. cap. 3. p. 331.

rn of great moment, of which we ſpoke at §. 834, nere there are alſo many other particulars relating this ſubject, and at §. 835. Here likewiſe the time the malady running out to a great extent, but with ſs violence of the ſymptoms than at the beginning, a material conſideration: for if all the ſymptoms main equally violent, or even increaſe, then a gan- rene or death are rather to be expected than a mild ppuration; which laſt, although here exremely dan- erous, is yet much better than thoſe worſe kinds of rminating a pleuriſy by a gangrene or by death. hus Hippocrates, in treating on a pleuriſy, has the llowing paſſage: *But thoſe who have immediately a itting of any kind in a pleuriſy, and the pains continue cceeding ſharp, theſe commonly expire on the third day; hich if they get over, they afterwards recover; but oſe who are not cured by the ſeventh, ninth, or eleventh y, begin to have a ſuppuration: however, it is better r them to have a ſuppuration than worſe; for although be very tedious, or difficult to cure, it is yet not fatal*[z]. his text of Hippocrates[a] deſerves to be compared ith another that is very much like it; unleſs that for αρχη παμπυοι αι πλυσιες, *in principio ſputationes penitus urulentæ*, "ſpittings wholly purulent," it ſeems bet- er to read, as in the other text, πλυσεις παντοδαπαι, ſpittings of any kind." But then in the ſame Coan rognoſtic it is added, that they expire on the third, r on the fifth day of the diſeaſe; but if they get over hoſe days, then if they do not find themſelves ſuffi- iently relieved of the malady, they begin to have a uppuration formed by the ſeventh, ninth, or eleventh ay. From whence it appears, that Hippocrates ex- ected a ſuppuration when the pleuriſy was not of the orſt condition; or though very violent in its begin- ing, had got a little abatement; having firſt obſerved n the principal critical days, whether nature made any

[z] At quibus ſtatim expuitiones cujuſvis ſunt generis, et dolores ad- modum acuti, illi tertio die moriuntur; quem ſi effugerint, convalescunt: ui vero ſeptimo aut nono die, aut undecimo die ſanus non fuerit, ſup- urari incipit. Præſtat autem ſuppurari, minus enim lethale eſt, quam- is laborioſum ſit. *De Morbis, lib.* iii. *cap.* 15. *Charter. Tom.* VII. .591.

[a] Coac. Prænot. 379. Charter. Tom. VIII. p. 873.

efforts, by which he might hope for an evacuation of the matter of the diſeaſe firſt concocted, or elſe a tranſlation of it to other parts: where he obſerved neither of theſe, he laid it down as a rule that a ſuppuration was begun.

Moreover, the celebrated Morton [b], and Baglivi [c], have obſerved, that when an inflammation of the pleura, or tubercles of the lungs, have turned into an abſceſs, thereupon the fever, that was firſt continual, began to form one intermitting, commonly a quotidian, or ſometimes tertian. Even ſomething of the ſame kind we read in Hippocrates, who ſays, *Fevers that are intermitting from a ſuppuration, generally become ſweating-fevers* [d]. And here we are to obſerve, that Hippocrates in the foregoing, and in the next following maxims of the Coan Præſages, treats eſpecially of a pleuriſy and peripneumony, and of thoſe ſweats, particularly nocturnal, to which the patients are inclined who are afflicted with internal ſuppurations.

From theſe ſymptoms therefore we know that an abſceſs is forming; and if the ſame ſymptoms continue a long time, we are thence aſſured that the abſceſs or ſuppuration is completed. But then there are other concomitant ſigns to confirm this diagnoſis, ſuch as ariſe from the diſtraction or compreſſure of the parts adjacent by the purulent tumour. For it is well known, that an abſceſs once mature, and turgid with pus by ſuppuration, in external parts, increaſes the pain by a diſtenſion of the ſkin; and even ſometimes thoſe pains are propagated from the adjacent parts that are ſtretched unto others that are more remote. Now ſuch an abſceſs, formed after a pleuriſy, by removing the pleura from the intercoſtal ſpaces, diſtracts or ſtretches it with great pain, which ſometimes ſpreads itſelf thro' the whole breaſt or back; the ſame will alſo preſs upon and irritate the lungs, ſo as often to occaſion a moſt troubleſome cough, or even endanger a ſuffocation, and

[b] Phthiſiologiæ, lib. ii. cap. 4. p. 44. [c] Prax. Med. lib. i. cap. 9. p. 36.

[d] Febres intermittentes ob ſuppurationem pleraeque ſudorificae ſunt. *Coac. Prænot.* nº 419. *Charter. Tom. VII. p.* 876.

nd this the more as the bag of purulent matter is arger or fuller. All theſe ſymptoms are recounted by Hippocrates in divers places. *A pain of the ſide, with ffocation of the breathing, denotes an abſceſs* [e]. And in nother place he has the following: *When a purulent umour is formed in the ſide, the patient is troubled with dry cough, a pain, and a fever; a weight or heavineſs preſſes that ſide, and a ſharp or ſhooting pain always eſides in the ſame place; the patient has intenſe thirſt, nd eructates or rejects warm drinks, and cannot bear to e upon the ſide affected, but only upon the oppoſite or ound ſide; but when they lie down, the purulent tumour ives them a heavy ſenſation, as if it was even a ſuſpend-d ſtone; the habit alſo becomes bloated or ſwelled, the ountenance flushed, and the legs ſwell* [f]. And again: *If n abſceſs ariſes in the ſide, ſo that the patient becomes mpyematic or purulent, he ſuffers the ſymptoms following; rigor or ſhivering invades, and a dry cough with a fever old for many days; the ſide is painful; and the pain hooting from thence affects the breaſt with the parts about he clavicle and ſcapula* [g].

But ſometimes the matter here formed is evacuated y ſpittings from the lungs, with an happy iſſue. We efore treated more at large concerning the paſſages y which purulent matter, ſeated under the pleura or ntercoſtal ſpaces, might find a way into, and be ſpit ut from, the lungs, at §. 888. And as the lungs are moſt frequently found growing to the pleura in thoſe who have once ſuffered a violent pleuriſy, under ſuch circumſtances one may more eaſily apprehend how matter can paſs from an abſceſs of the pleura into the cohering lungs. In the body of a man, whoſe malady

I

e Ad latus dolore ac ſuffocatione accedente, hi ſuppurantur. *Ibid.* 50 115. *p.* 858.

f Quum tuberculum lateri oboritur, tuſſis dura detinet et dolor, et febris, et pondus in latus incumbit, et dolor acutus eundem locum ſemper occupat, et ſitis vehemens, et calidum potum eructat, et decubitum in latus affectum non ſuſtinet, ſed in ſanum. Verum ubi decumbit, velut ſaxum ipſi ſuſpenſum videtur: intumeſcit, ac rubet, pedeſque tumet. *De Morbis, lib.* ii. *cap.* 24. *Charter. Tom. VII. p.* 575.

g Si in latere tuberculum oriatur, et purulentus fiat (æger), hæc patitur: rigor detinet et febris et tuſſis ſicca per multos dies, et latus dolet, et dolor in mammam, et claviculam et ſcapulas impetum faciens obſidet. *De Internis Affectionibus, cap.* 10. *Charter. Tom. VII. p.* 644.

I knew not, being ſold to me clandeſtinely for anatomical uſes by one of the bearers, I found the left lobe of the lungs firmly cohering with the pleura, through a very large compaſs; and when I freed this coheſion by the knife, in order to take out the lungs, a great quantity of matter flowed out; and yet it appeared, by examination, that the lungs were here not ſuppurated, but only cohered firmly with a purulent cyſt or bag formed by a ſuppuration in a pleuriſy. Certainly, if this man had ſurvived any conſiderable time longer, it ſeems probable that the matter would have made itſelf a way into and through the contiguous lungs which ſo firmly cohered. But whichever way the matter may get into the lungs after a ſuppurated pleuriſy, undoubted obſervations aſſure us it is ſometimes thus evacuated through the lungs by a ſpitting; and I believe there is no phyſician, in any conſiderable practice, but has ſeen the like, which hath frequently fallen under my own obſervation. There is a remarkable caſe in le Motte [h], of a pleuritic patient, who, having neglected his malady, diſcharged from his lungs a very large quantity of matter by a moderate cough upon the eighth day, and with an happy iſſue. Even Hippocrates manifeſtly declares the ſame, when he ſays of a pleuriſy, *But the critical termination of this malady is, for the ſhorteſt time, within the ſeventh day, but at longeſt within the fourteenth day; by which times, if the matter be ſpit up from the lungs, and cleared from the abſceſs, the patient recovers. But if the matter be not thus evacuated by a ſpitting, the patient becomes empyematic or conſumptive, which is a chronical or lingering malady* [i]. A prognoſtic of the ſame kind he alſo gives us in his aphoriſms: *Pleuritic perſons, who are not cleared of the malady by (the mouth or) a ſpitting, turn empyematic* [k]. For Galen, in his commentaries to that aphoriſm,

[h] Traite complet de chirurgie, Tom. I. p. 248.

[i] Judicatur autem hic morbus, breviſſimus quidem ſeptimo die, longiſſimus autem decimo quarto die: quo quidem ſi pus a latere per ſputum rejectum fuerit et repurgatum, ſanus evadit. Si vero non per ſputum rejectum fuerit, purulentus fit, et morbus longus. *De Affection. cap. 3. Charter. Tom. VII. p. 621.*

[k] Pleuritici, qui intra quatuordecim dies ſuperne non repurgantur, illis in empyema tranſit. *Aphor. 8. ſect. v. Charter. Tom. IX. p. 199.*

aphorism, proves that the word (αναχαθαιροντα) *cleared upwards*, signifies that cleansing which is made by a spitting.

§. 894. BUT such an abscess, broken open by its own proper matter, therefore allows the said matter to drain into the cavity of the breast; and new matter being formed and collected by the ulcer, at length fills the entire cavity, and makes a consumption of the whole body. That such an ulcer is formed, we know from the preceding signs (§. 892, 893.) and from the continuance of the malady even to the fourteenth day; from the sudden abatement of the symptoms, and the speediness of their return: and hence comes a true phthisis or pulmonary consumption.

An abscess thus formed, and turgid with collected matter, breaks into an ulcer sooner or later, if it be not timely evacuated from the body by other outlets; which yet rarely happens but through the lungs, of which we have just treated. Aretæus [l] indeed seems to have been of opinion, that sometimes the matter of an abscess formed after a pleurisy, might be evacuated from the intestines, so as to leave the patient afterwards well; but he also in another place [m], mentions discharge of the matter in like circumstances both by stool and by the urine; but he commends the transflux of matter through the kidneys and bladder, as the better of the two. Upon another occasion, in the comment to §. 406, we mentioned, that Galen and others observed vomica's or bags of matter in the breast to have discharged themselves by stool and urine. It was formerly usual to oppose the authority of Hippocrates against that of Aretæus; as the first pronounces [n], That *a flux*

l Morbor. Acut. lib. i. cap. 10. p. 9. Idem Morbor. Diuturnor. lib. i. cap. 9. p. 38.

m De Causis et Sig-

n Pulmonem suppuratis per alvum pus secedere, lethale est. *Coac. Prænot.* nº 431. *Charter. Tom. VIII. p.* 877.

flux or purging of matter from the bowels of thoſe who have ſuppurated lungs, is a fatal ſign. But here Hippocrates has no regard to a pleuriſy; and with reſpect to a pulmonary conſumption, thoſe purgings are always of the moſt dangerous import; even the ſuppuration itſelf, that enſues after a pleuriſy, is principally dangerous on account of the uſual injury it offers to the lungs in contact. Moreover, it appears from all practical obſervations, that in ſuppurations of the internal parts that have been long ſuſtained, when a purulent or putrid diarrhæa ariſes, it uſually takes off the patient. But Aretæus does not here ſpeak of ſuch a flux or purging from the bowels as ariſeth from the colliquation and corruption of the fluids by the abſorbed or returned matter; but of a more ſincere flux of matter by ſtool, before it has continued any long time confined in the vomica of the breaſt: for his words are (ην ες εντερον εκρᾳγη,) if it ruſhes through the inteſtine. The word εκρηγνυσθαι denotes a ſudden vehemence.

Unleſs, therefore, the matter here collected ſhall eſcape by thoſe outlets, or perhaps be depoſited by a tranſlation upon other parts (as rarely happens), the abſceſs, then breaking, generally pours out its matter into the cavity of the breaſt, and there creates more or leſs miſchief in proportion to the quantity. But the abſceſs, thus broken and turned ulcerous, will pour out daily more new matter; by which means there is often a very great quantity of corrupt matter lodged in this venter. Such a quantity once ſurpriſed our celebrated Boerhaave in a country lad, who had been afflicted with a pleuriſy in the harveſt-time, from the ſudden drinking of cold liquors to exceſs, after he had been much heated by the ſun and labour. By neglecting the diſtemper, as people often do in the country, it ended in a ſuppuration; and in a month after, the patient expired by a ſuffocation. Upon opening the abdomen, the diaphragm appeared thruſt downward on the affected ſide, ſo as to form a large bag that projected beyond the navel, and had thruſt moſt of the abdominal viſcera out of their ſituations. Upon making a perforation through this bag, there flowed

out

ut above twelve pounds of matter. Aretæus o of old, aving remarked cafes of the fame kind, confeffes that e much wondered how fo great a quantity of matter ould flow from fo thin a membrane as the pleura, hich had fcarce any fubftance or thickneſs; but he ffigns for a reaſon, that this membrane grows thick- by inflammation. But if, now, we conſider, that ne matter falling into the cavity of the breaſt becomes ore acrid by ſtanding, and perpetually lies upon the rface of the ulcer, we may thence eaſily perceive, nat ſo long as there is no outlet to the matter, the lcerated part can never be reduced to the ſtate of a lean wound, and ſo cannot be healed; therefore it ontinues to pour out a purulent matter, and in a conderable quantity, ſince the adjacent heart ſtrongly lls the intercoſtal arteries, and the ſurface of the ulr is continually fretted by the confined matter in ne breaſt and the agitation of the lungs in breathing.

We know ſuch an abſceſs has broken and poured ut its matter into the cavity of the breaſt, if thoſe gns have preceded which denote an abſceſs to be rmed, of which we treated a little before. But ſuch vomica, or bag of matter, while it remains entire and iſtended with pus, fills part of the cavity of the breaſt, nd compreſſes the lungs; and therefore occaſions almoſt all the ſame ſymptoms which were enumerated efore at §. 835. Moreover, it is to be remarked, that he pains of the inflamed part abate while matter is rming; but when afterwards the abſceſs, filled with natter, becomes more diſtended, and the membranes ncluding the matter are by degrees more enlarged, here follows at length a moſt troubleſome pain, which s ſo much the more ſevere as the purulent vomica is earer upon the point of burſting. This has ſometimes deceived leſs ſkilful phyſicians, who aſcribing he ſaid ſharp pain to a new inflammation, have ſometimes exhauſted the patient's ſtrength by repeated lood-lettings when they were already near ſpent by he lingering diſeaſe itſelf. But when once ſuch an bſceſs has broken and poured out its matter into the capa-

o De Cauſis et Signis Morbor. Diuturnor. lib. i. cap. 9. p. 37, 38.

capacity of the breaſt, the pain ceaſes ſuddenly, and the anguiſh or oppreſſion that enſued from the compreſſure it made upon the lungs greatly diminiſhes, inſomuch that the unhappy patient, ſenſible of ſuch ſudden relief, often vainly imagines that a perfect cure is made: but when the quantity of the matter collected in the breaſt is augmented, the oppreſſion, cough, and almoſt all the other ſymptoms, return, and convince the patient of the ſad vanity of his hopes.

Hippocrates has well ſummed up the diagnoſtic ſigns which uſually go before, and attend upon, ſuch a formed ſuppuration, and a burſting vomica or abſceſs; and alſo remarks that the time of this rupture is uncertain, being ſometimes ſooner, ſometimes later: "Thoſe who after a pleuriſy, or peripneumony, be- "come ſuppurative, or empyematic, are troubled with "flushings or heats, ſlight in the day-time, but more "violent in the night; they ſpit nothing conſiderable, "are apt to have ſweats about the neck and breaſt, and "their eyes appear hollow or ſunk, but their cheeks "look red. As the malady grows worſe, the ends of "the fingers often turn rough and hot, the nails grow "crooked and chilled, the legs or ankles ſwell, puſtules "break out about the body, and they have an averſion "to food. Long-continued vomicas, or ſuppurated "tumours, have therefore the above-mentioned ſigns; "but thoſe which break in a ſhort time are denoted "by the ſigns which come afterwards, and from the "pains in their beginning or formation, and likewiſe "from the oppreſſion or difficulty of breathing in the "patient. But moſt of theſe ſuppurations break, ſome "on the twentieth day, others on the fortieth, and "others on the ſixtieth. In ſuch therefore as have "the pain more urgent in the beginning of the abſceſs, "and the breathing more difficult, with a cough and "ſpitting, you may expect it will break by the twen- "tieth day, or ſooner; but in ſuch as have theſe ſymp- "toms more ſlight, you may expect it will be longer "of breaking in proportion: but then computation is "to be made from the firſt painfulneſs of the abſceſs, "or the oppreſſion; or from the time that the ſlight

"fever,

" fever, or the ſhivering, was perceived. But there " muſt of neceſſity be ſome pain, difficulty of breath- " ing and ſpitting, perceived before the breaking [p]."

But that a pulmonary conſumption or phthyſis, gradually waſting the whole habit of the body, may ariſe from the matter collected in the capacity of the thorax, no one doubts.

§. 895. THEREFORE, when we are acquainted by the ſigns (§. 892, 893.) that the part inflamed forms an abſceſs, the place that was before painful, being marked, is to be opened, or eat through with a cauſtic to about the depth of the pleura, which muſt be opened by inciſion: the opening once made muſt be kept open, by ſuppurative dreſſings, that the matter preſſed outward by the expanſion of the lungs may avoid the pleura, and prevent an empyema; afterwards, until the cleanſing be ſufficiently completed, it muſt be treated with emollients.

Since the principal danger of a ſuppurated pleuriſy lies in the falling of the matter ſo frequently into the cavity of the breaſt by a rupture of the abſceſs; therefore, when the ſigns teach us that ſuch a ſuppuration is already formed, an attempt muſt be made to procure a diſcharge for the matter by the external parts. To this purpoſe conduce fomentations, cataplaſms, emplaſters, *&c.* which are applied to the painful ſide, even in the beginning of the diſeaſe, as was ſaid before (at §. 890, nº 2.); for theſe, by mollifying the exterior parts, procure a more eaſy derivation of the matter thither: but as thoſe emollients are ſeldom alone ſufficient, therefore the wiſe ancients intermixed more acrid or ſtimulating ſubſtances with them, that, by irritating the outward parts, the latent malady might be ſolicited that way. Thus Aretæus in the cure of a pleuriſy, ſays, " If the diſeaſe be farther advanced, the " pain ſtubborn, and a phlegmatic ſpitting attends,

[p] Coac. Prænot. 402. Charter. Tom. VIII. p. 875.

" there is room to hope the patient will have a ſuppu-
" ration; and then muſtard-ſeeds, and cummin-ſeeds,
" are to be mixed with the cataplaſms. [q]" But after theſe applications he recommends the fixing a large cupping-glaſs, after the ſeventh day, with a great flame, to the painful ſide or affected part, and then to ſcarify the ſame; he then orders the inciſions of the ſcarificator to be rubbed with ſalt or nitre, and the day following to apply another cupping-glaſs. Now it is well known, that parts of the body placed under a cupping glaſs, ſwell immediately, from the leſſened preſſure of the atmoſphere upon that part; by which means a moſt powerful derivation is made towards the integuments upon which cupping-glaſſes are fixed: alſo the irritation of the little wounds by ſalt or nitre, anſwers the ſame purpoſe.

Moreover, when we are certain that an abſceſs is formed, it will be proper to divide the incumbent parts down as far as the pleura, either by the cauſtic or ſcalpel; and then by the uſe of digeſtive or ſuppurative dreſſings to keep the parts open for a conſiderable time, that the matter, meeting here but little reſiſtance, may paſs from within outward. Hence it may be worth while to mark the place that is moſt painful in the beginning of a pleuriſy, by affixing a ſmall emplaſter; becauſe here the abſceſs uſually ariſes or points, when the malady neither inclines to be cured by a reſolution, nor a concoction and excretion; ſo that by this mark one may afterwards better apply a cauſtic or make an inciſion upon the known part. This is indeed a rare practice amongſt our modern phyſicians, and few patients are ready to admit the precaution; but in the mean time it well deſerves to be tried, in order to avoid ſo dangerous a conſequence as an empyema. It appears that Hippocrates uſed this method of cure in the preſent malady: for, in treating on an abſceſs or vomica of the lungs, he adviſes what ought to be done in order to break the vomica and expectorate the confined matter; and then ſays, *But if the matter does not expectorate, or come up, ſince by length*

[q] De Curatione Morbor. Acutor. lib. i. cap. 10. p. 91.

length of time in some patients it makes an abscess and tumour of the side; when this happens, the swelling ought to be opened by incision or caustic[r]. And a little after, treating on the cure of an abscess in the side[s], he prescribes the same method: and yet he there seems to have made his incision in the painful or pleuritic side, while the inflammatory rèdness and pain were still there; for in that case we are yet more certain, that the confined matter may tend outwardly. But since a happy cure can only be expected in this malady while the matter is yet laudable or inoffensive, because these patients usually miscarry when once the matter has by rest and stagnation begun to putrefy; therefore Hippocrates gives this admonition: *If suppurated, or empyematic patients, who are treated by incision or by caustic, have the matter that flows out pure and white, they recover; but if they have it filthy, bloody, and ill-smelling, they are lost*[t] But Galen[u] remarks in his comment upon this aphorism, that Hippocrates more especially calls those *empyematic* or *suppurated*, who had a collection of matter betwixt their breast and lungs, and who were usually cauterised for it by the ancients, as he proves out of an ancient comic writer. Hence it seems very probable, that both cautery and incision were sometimes used by the ancients, when they were assured of a present suppuration, although no apparent tumour and redness were perceived in the outer parts of the breast; more especially as from thence no mischief was to be feared, and there was a probability of their doing great good.

But that considerable benefit may be expected, as to the evacuation of the purulent matter that is more deeply seated, by keeping such artificial outlets open for a considerable time by digestive or suppurative dressings, we are taught by the following case. After

[r] Quod si non eruperit (quibusdum enim precedente tempore ad latus abscedit, et intumescit), illum oportet, ubi hoc contigerit, secare aut urere. *De Morbis, lib.* ii. *cap.* 22. *Charter. Tom. VII. p.* 574.

[s] Ibid. cap. 24. p. 575.

[t] Qui suppurati uruntur aut secantur, si pus purum et album effluat, evadunt; si vero subcruentum, et cœnosum, et graveolens, pereunt. *Aphor.* 44. *sect.* 7. *Charter. Tom. IX. p.* 315.

[u] Ibid. p. 316.

a neglected pleurisy, a swelling formed itself under the left scapula, where it remained two years without causing any great uneasiness: But afterwards the swelling received an injury by some violence; from which it began to be painful, and to be attended with a violent cough that was troublesome both by day and night: the patient had a spitting of an ill-smelling, yellow, and thin matter, mixed with a little blood: the pulse was quick, hard, and joined with great heat; the body extenuated; and the appetite lost. A prudent physician, judging this tumour could not be opened without danger, chose rather to follow the steps of the ancients, who made issues by cauterising the intercostal spaces for internal suppurations. Accordingly he procured a seton to be made betwixt the two ribs that lay next the bottom of the swelling, but with such caution as not to let the needle perforate the tumour itself: a very large quantity of matter was drained off by this seton; all the symptoms were relieved, the patient's strength returned, the tumour subsided, and he got happily cured in a short space of time [w].

A great number of observations have been recorded by physicians, which inform us, that matter, collected in the intercostal spaces, has made itself very surprising passages to escape outwardly. I shall only relate one instance, which is singular, and fell under my own observation. A youth of twenty years old, after running beyond his strength, was seized with a pleurisy, which he neglected in its beginning; for which reason the malady ended in a suppuration, with great oppression in the breast. About the thirty-fourth day of the distemper, he began to have a plentiful spitting of matter; which came up easily, and greatly relieved him; but yet an obtuse or heavy pain continued in the right side of his breast, and all the ribs of the same side began to project, outwards although for thirty days running he continually expectorated great quantities of matter: to this succeeded a diarrhœa greatly weakening, while a slight hectical fever remained, and wasted the whole body. This unhappy

[w] Medical Essays, Vol. V. Part. 2. p. 629, &c.

unhappy patient, tired out with the length of his malady, rejected all medicines; and under these dark circumstances he bore up for a considerable time; but in the tenth month, a soft tumour appeared in the middle of his sternum, about the size of a filbert-nut; and in the margin of this tumour I could plainly feel with my finger the edges of the os sterni, that was eaten through: after a few days, this tumour broke of itself, and discharged a great quantity of good matter, of which the flux continued for above eight months, so that there was just reason to fear at length that the patient would sink under it. The surgeon was able to throw in a pint of a detersive decoction, with honey, at one time by a syringe, into this hollow bag, which did not allow the liquor to penetrate into the capacity of the thorax, but seemed to run betwixt the pleura and the ribs, and then easily flowed out again by the opening in the sternum above mentioned: but the quantity of matter daily lessening in its discharge, the patient at length recovered; and I saw him eight years afterwards alive, healthy, and strong, although the opening in his sternum still continued, and made daily some discharge of matter.

I have seen many other cases where the matter, after a suppurated pleurisy, has made itself a way through the intercostal spaces; and I have remarked that many of them survived, after their case had seemed desperate. Perhaps such recoveries induced Hippocrates to pronounce, That *they in general who have a pleurisy, or a peripneumony suppurated, are not killed thereby, but recover* [x]. Whereas all physicians observe with concern, that when an ulceration of the lungs follows from an hæmoptoë, or some other different kinds of a phthisis, the patients generally are killed thereby; while many who have very large suppurations in the breast and lungs, after inflammatory distempers, escape; namely, when the formed matter can be properly evacuated, either by a spitting, or by some out-

[x] Et quicunque ex peripneumonia vel pluritide fiunt suppurati, non moriuntur, sed convalescunt. *De Locis in Homine, cap.* 7. *Charter. Tom. VII.* 366.

let procured either by art or nature, before it drains into the cavity of the breaſt; for when once it has entered there, the caſe is much more dangerous, as will be ſhewn in the aphoriſm next following.

§. 896. BUT if it appears by the ſigns before alleged (§. 302, 894.) that the abſceſs being broke open has by its matter formed an empyema; then the thorax (by §. 303, nº 5.) is to be immediately perforated; the matter (by §. 303, nº 5.) is to be evacuated; and, finally, the wound is to be healed up by diet and medicines, (§. 304.)

We have already declared, (§. 894.) how the breaking of an abſceſs here formed may be known; and we have alſo treated upon the ſigns of an evaſated fluid within the cavity of the thorax, at §. 302, where we conſidered wounds of the breaſt; and therefore, from the conjunct appearance of thoſe ſigns, one may conclude evaſated matter to be lodged within the breaſt. Now although we here and there read extraordinary caſes, in the writers of obſervations, where matter, abſorbed from the cavity of the breaſt, has been excluded by ſtools or urines; yet it will be very unſafe to delay the cure, from any ſuch expectations: for unleſs the collected matter that lies here upon the lungs be ſpeedily evacuated, when it is become more thin and corroſive by its ſtay and by the continual ſhaking by the breathing, it will cauſe a miſerable conſumption of the lungs; and then any attempts to diſcharge the matter from the breaſt will be fruitleſs, when once the lungs are waſted by the matter too long left upon them. But as for the place of the thorax in which the opening ought to be made, and the circumſtances that muſt be obſerved in the operation, we have treated of them at the numbers of the aphoriſms cited in our text; and hereafter we ſhall have occaſion to ſpeak of the ſame, when we come to treat, in a particular chapter, upon an Empyema amongſt chronical diſeaſes.

raſes. But ſince there is always danger leſt the thinner parts of the collected matter in the capacity of the breaſt, abſorbed into the blood by the bibulous veins, ſhould infect the whole maſs with a purulent cacochymia, ſuch things are to be given in the diet as are the moſt contrary to all putrefaction, (for which ſee §. 599, and §. 605, n° 2.); and at the ſame time plenty of decoctions from the roots of burdock, china, and ſarſaparilla, with infuſions of agrimony, betony, goldenrod, *&c.* are to be given, to waſh from the blood, by the outlets of ſweat and urine, all abſorbed purulency.

§. 897. SECONDLY, A pleuriſy ends in another diſeaſe, when the affected parts become ſcirrhous or callous; or alſo by an adheſion of the lungs to the pleura: which conſequences having once taken place, give birth to an aſthma, diſpnœa, and dry cough, eſpecially after a meal, or ſome commotion of body: from whence ſuch a termination of the pleuriſy is known, if theſe diſorders of the breathing are preſent without the ſigns of an abſceſs (§. 893.) or an empyema (§. 896.), and ſtill more if they hold long without any great increaſe of the malady.

Of all the particulars in this aphoriſm, we have treated in the commentaries to §. 843. where we conſidered a like ending of an inflammation in the lungs into a ſchirrhous and a callous tumour.

§. 898. THIS laſt kind of malady (§. 897.) being known, is either not to be remedied by any medicines; or may be removed by a harder way of living, by labour or exerciſe, a free air, dwelling in the country, with briſk riding on horſeback often repeated.

See what has been ſaid at §. 862, on the cure of the like malady produced from a peripneumony.

§. 899. THIRDLY, Such a pleuritic inflammation alſo terminates in a gangrene, firſt of the ſide, and afterwards of the adjacent parts with the lungs (§. 844.).

In the hiſtory of inflammation we explained how a gangrene ought to be reckoned among the events of that malady: ſince therefore it has been proved (§. 882.) that a pleuriſy is a true inflammation, it is thence evident that this diſtemper may alſo end in a gangrene. But ſince this fatal event follows only from a pleuriſy of the moſt violent kind, which ſtifles the breathing through the ſeverity of the pain; for that reaſon the lungs are at the ſame time almoſt conſtantly affected, as alſo becauſe they are always contiguous to the pleura.

§. 900. THIS gangrene then (§. 899.) ariſes either from the violence of the pleuriſy, or from the acrid or putrid matter that attends upon or joins it.

Concerning the cauſes by which an inflammation terminates in a gangrene, we treated before at §. 388.

§. 901. BUT that ſuch a gangrene is approaching and already begun, is preſaged by various appearances. Thus, if there is a yellowiſh purulent ſpitting, that is round, or not ropy; or a purulent ſpitting that is either mixed with a little blood, or of a ſooty-black appearance, or muddy, and fetid or ill-ſmelling; a conſiderable rattling in the breaſt; a grieving countenance; the eyes appearing red and yellow, and ſeeming duſty or cloudy; or if the ſpitting be from the beginning various or unſettled:

ttled: under theſe ſymptoms, the third or fifth ay brings death to the patient. If there be a ıorting or rattling, without a ſpitting, or with ne that is difficult; a languid pulſe; a flame-ɔloured urine: if there be an humoral flux from ıe bowels, that appears putrid, fetid, and ſymp-ɔmatical of the preceding malady: if a violent eripneumony ſupervenes; or if there be a new tack of the malady ſupervening the former: , upon opening a vein, the blood flows out ex-remely florid, without any inflammatory cruſt §. 384.) even though the blood be taken in a ıll ſtream, from an ample orifice, and received ıto a clean veſſel: if the ſpitting be ſuppreſſed, nd the difficulty of breathing ſtill remains; or in-reaſes, with the pain and oppreſſion of the breaſt, ſmall, quick, and hard pulſe: all theſe ſymp-ɔms, growing the worſt upon the fifth day, ring death upon the ſeventh. If the urine be ery red, obſcure, with a various ſediment that oes not diſtinctly ſeparate, it kills in fourteen ays; or if the ſediment be black, of a ſcaly or ran-like appearance, death comes ſooner. If ne diſorder be mild in the beginning, but in-reaſed on the fifth or ſixth day, they are moſt n danger on the ſeventh and twelfth, and are eldom recovered, unleſs after the fourteenth day. f the back, the ſide, and the ſhoulder, appear ot and red with great anguiſh, while there is a ery fetid and greeniſh flux from the bowels: ll theſe declare for a gangrene.

It is a matter of importance to be acquainted with he ſigns which teach us when ſo dangerous a termi-ation of a pleuriſy is to be feared; and this, partly, hat the phyſician may be able to call in all the aſſiſt-nces of art to prevent what he has juſt reaſons to fear; and

and partly, that he may guard his own reputation, by being enabled to give a due preſage, leſt the fatal conſequence ariſing from the violence of the diſeaſe, might unjuſtly be attributed to ſome neglect in the cure. Therefore Hippocrates, commending a knowledge of the ſigns in all diſeaſes, very juſtly pronounces, *For that ſuch a phyſician will be much better able to preſerve thoſe of his patients who are recoverable, having long before conſidered all the ſigns and circumſtances; and by the ſame means he will avoid all blame or reflection, if he foreſees and foretels who are to die, and who are to eſcape or recover* [y].

The ſigns in this aphoriſm are collected from Hippocrates, and point out either the vehemency of the malady, or the weakneſs of the vital forces, or the very bad degeneration of the humours from their healthy laws or conditions, and the very difficult ſubjection or concoction of the material cauſe of the malady.

If a yellowiſh purulent ſpitting that is round or ropy.] Why theſe ſpittings are condemned by Hippocrates, we explained before at §. 833, nº 3, and §. 848.

Purulent and mixed with a little blood.] Such a purulent ſpitting indeed denotes that the matter of the diſtemper is ſubdued; but if it be at the ſame time ſomewhat bloody, it imports alſo that the veſſels are either eroded or broken, and for that reaſon is eſteemed a bad ſign. Moreover, when there is a gangrene in the external parts of the body, and that diſk or margin appears which ſeparates the gangrenous or corrupted from the living parts, then this margin uſually diſcharges ſuch a ſomewhat bloody matter; which is therefore no ſuch bad omen in the external parts, becauſe it there denotes a ſeparation of the dead from the living: but, inwardly, it always denotes great danger, namely, of a preſent gangrene; which is ever of dangerous conſequence in the interior parts, even though a ſeparation of what is gangrenous be already begun. And therefore here it is immediately ſubjoined, "of "a

[y] Nam et eos qui ſervari poſſunt, multo etiam melius ſervare poterit, longe ante ſingula præmeditatus; et eos, qui tum obituri mortem, tum evaſuri ſint, ſi præviderit, prædixeritque, omni prorſus culpa vacabit. *In Prognoſtic. Sentent.* iv. *Charter. Tom. VIII. p.* 585.

a footy-black, or muddy appearance, and fetid or ill-ſmelling;" namely, when the dead parts begin to elt into a gangrenous tabes or corrupt matter, evacued by ſpitting, which is a diſcharge from a vital orn, the lungs. But this preſage is thus expreſſed by ippocrates: *Thoſe who from pleuritic diſtempers have purulent yellowiſh ſpitting that is round or not ropy, or ſpitting of matter intermixed with ſome blood, do in ocеſs of time fall into the moſt miſchievous circumſtan-; and thoſe are alſo in a pernicious caſe, whoſe ſpitting of a footy black appearance, or who ſpit like the lees of rk red or black wine* [z].

Here conſult what has been ſaid upon brown, mud-, and filthy ſpittings, at §. 848.

A great rattling in the breaſt, *&c.*] What this ratng in the breaſt denotes, has been declared before in commentaries to §. 848. As to the grieving counnance, and duſty appearance of the eyes, we treated §. 734, where we enumerated the worſt ſigns which ually accompany a putrid continual fever. Moreer, it is to be remarked, that the tunica adnata of the has naturally a bluiſh-white colour, with hardly y blood veſſels therein apparent; therefore the huours which naturally flow in the veſſels of that coat, thinner than blood and its ſerum. When therece the eyes become of a yellowiſh-red appearance, it n ſign that the groſſer juices enter into the ſmaller ſels of this part or pellicle, where they heſitate for nt of a paſſage. But ſince anatomical injections ve taught us, that the eyes receive veſſels from a nch of the internal carotid, we know by this ſign t a like arreſtment or infarction of the groſſer juis obtains in the ſmaller veſſels of the encephalon; which reaſon this ſign is always eſteemed very danrous in acute diſeaſes. But Hippocrates has more ecially condemned theſe ſigns in pleuritic patients, en he ſays, *Thoſe pleuritic patients who have much ttling in their breaſt, with a grieving countenance, and eyes*

[z] Qui ex pleuriticis exſpuunt purulenta, ſubbilioſa, rotunda, aut punta ſubcruenta, progreſſu temporis pernicioſe habent: pernicioſeque, qui nigra fuliginoſa ſpuunt, aut quibus velut a vino nigro ſpuunt. *Coac. Prænot.* nº 407. *Charter. Tom. VIII. p.* 876.

eyes (yellowiſh-red) as in a jaundice, and dim or cloudy, ſuch are paſt recovery [a].

If the ſpitting be from the beginning various or unſettled, *&c.*] We before took notice, §. 830, nº 2. and §. 876. of Galen's obſervation, That the diſcharge by ſpittings, in pleuritic and peripneumonic diſorders, have a reſemblance to the ſediments of urines, which denote the concoctions and crudities in diſeaſes. If therefore the ſpittings are changing or various, they always denote a difficulty of the malady, and that concoction or maturation of the matter goes on very imperfectly. See the commentaries to §. 893, where we treated of this variety of the ſpittings, and where you have alſo the paſſage of Hippocrates that contains this prognoſis.

If there be a ſnorting or rattling, without any, or with a difficult ſpitting.] For this is a ſign the lungs are more and more filled, while in the mean time nothing enters or goes off into the wind-pipe, which being thrown out by a ſpitting might greatly relieve the oppreſſed and ſtuffed-up lungs. See what was ſaid at §. 848.

A languid pulſe.] For it denotes that the powers moving the blood are weak, or that there is a deficiency in the quantity of the fluids to be moved by them. But here we are not treating of that weakneſs of the pulſe that is ſometimes obſervable after repeated bloodlettings, when much of the pleuritic pain has abated, and the reſpiration is become eaſier; but of the languid pulſe which attends while the pleuriſy is ſtill violent, and which enſues from the hindrance of the reſpiration, ſo far ſtuffing up the lungs with groſs blood, that they can tranſmit only a very ſmall quantity to the left cavities of the heart; which cauſes a leſs diſtenſion of the arteries. See here what was ſaid at §. 883, upon the ſame ſubject. Therefore, in this caſe, ſuch a languid pulſe affords one of the worſt omens, if at the ſame time there is a rattling in the breaſt.

A

[a] Quibus pleuriticis ſtrepitus multus in pectore eſt, et facies triſtis, et oculus icterícius ac caliginoſus, hi pereunt. *Coac. Prænot.* nº 388. *Charter. Tom. VIII. p.* 873.

A flame-coloured urine.] Which, being of a range and dilute reddiſh colour, ſeems as it were to ſhine or ſparkle in the glaſs that holds it; and is a ſign of the internal heat that then prevails, as was ſaid at §. 673.

If there be an humoral or liquid flux from the bowels, *&c.*] For ſuch a flux of the bowels ſhews a great degeneration of the humours towards corruption and putrefaction, and never affords the patient any relief, as does the other flux deſcribed at §. 888, no 3. to which this is ſo contrary; for that evacuated, by ſtools, the ſubdued matter of the diſtemper out of the habit. But it was before remarked, §. 388. that an acrid diſpoſition of the juices diſpoſeth an inflammation to turn into a gangrene.

If a violent peripneumony ſupervenes.] In a pleuriſy the patient hardly dares to breathe for the ſeverity of the pain, whence the ſcarcely dilated lungs are ſoon filled or ſtuffed with groſs blood, which occaſions a peripneumony to ſucceed after a violent pleuriſy. But when the pain is abated by a copious blood-letting, the breathing or inſpiration is rendered eaſier, and the courſe of the blood, which began to be arreſted in the pulmonary artery, is quickened forward, whereby ſuch a ſlight and incipient peripneumony is ſoon reſolved. I have beſides frequently obſerved, that a kind of ſlight peripneumony happens when the matter of a pleuriſy, being concocted, endeavours to make its eſcape by a ſpitting. For this reaſon our text ſays, "if a *violent* peripneumony ſupervenes," which being in itſelf ſo dangerous a malady, muſt when joined with a pleuriſy) be in the laſt degree fatal. Hence we may underſtand why Hippocrates ſhould ſay, That *a peripneumony from a tranſlated pleuriſy is leſs dangerous than one original, or firſt formed in the lungs* [b]. For it ſeems that in this place we ought to underſtand thoſe ſlight oppreſſions of the breaſt that happen while the diſſolved matter of the pleuriſy is derived into the lungs, and from them diſcharged by ſpit-

[b] Peripneumoniæ ex pleuritide tranſmutatæ (μεταστασει) ſecuriores his quæ ab initio fiunt. *Coac. Prænot.* no 397. *Charter. Tom. VIII.* 675.

tings, or by the other outlets, of which we treated at §. 888: for when this matter of the pleuriſy, however much diſſolved, or rendered fluxile, has ſtill ſuch qualities as render it unable to flow with the reſt of the found humours through the veſſels, without cauſing an uneaſineſs; then it will be arreſted for ſome ſhort time in the narrow extremities of the pulmonary artery, before it can be able to paſs into the pulmonary veins. And this is, perhaps, one of the cauſes which occaſion the oppreſſion and uneaſineſs that are obſervable before the critical evacuations are made, as we remarked before on another occaſion. But when a peripneumony, more eſpecially a violent one, comes after a pleuriſy that is ſtill remaining, we thence underſtand the truth of another maxim of Hippocrates, That *a peripneumony is of a bad kind, when it comes on the back of a pleuriſy*[c]. And Galen[d], in his expoſition of this aphoriſm, well obſerves to us, that it does not treat of the change of a pleuriſy into a peripneumony, (like that paſſage of his Coan Preſages laſt cited); but that this place is to be underſtood to mean a ſecond diſeaſe added to the firſt, namely, a peripneumony on the back of a pleuriſy, the latter ſtill remaining: therefore the phraſe (επι πλευριτιδι) *upon a pleuriſy*, has here the ſame import with (επιγινομενη πλευριτιδι) planted or *engrafted upon a pleuriſy*.

If there be a new attack of the malady ſupervening the firſt.] All who are verſed in practice, know, that it is generally cuſtomary in a pleuriſy for the pain to abate after blood-letting, and ſometimes even wholly to ceaſe; and yet, in a few hours after, it ſhall often return, and require a new blood-letting: but yet a gangrene is not immediately to be preſaged from ſuch a return of the pain, as if it were a new return of the pleuriſy, becauſe many recover from the diſtemper after they have ſuffered ſeveral ſuch abatements and returns. But this ſentence is to be underſtood to mean a greater degree of the malady added to a leſs, by a ſudden increaſe of its violence, while the

[c] A pleuritide peripneumonia malum. *Aphor.* 11. *ſect.* 7. *Charter. Tom. IX. p.* 297. [d] Ibid.

the primitive pain remains little or nothing abated; or when, the first pain continuing, another seizes the opposite side of the breast in like manner, as I have sometimes observed. Something like this admonition seems to be given us by Hippocrates, when he says, *Now when the humours that stuff up the side of the breast are digested or made purulent, and have then been thrown out by a spitting, these pleuritic patients recover; but if the pleurisy be of long continuance, the matter obstructing the side much in quantity, and still another (pleurisy, or its cause) shall be added upon the back of the first, they are directly lost*,[e] &c. But the sense in which the humours are here said to putrefy, digest, or turn purulent, before they are expectorated towards the patient's recovery, has been already explained at §. 387, in our comment upon Suppuration, where we proved, that the term *putrefy* is used by the ancients to denote the maturation of inflammatory matter.

If the blood flows out very florid, *&c.*] This is a practical observation published to us by Baglivi[f], who yet confesses himself indebted for it to the celebrated Lancisi. The reason of this appearance, he thinks, is, That then the viscid parts of the blood which are most gross, sizey, or impervious, and apt to breed inflammation, are collected in the lungs, and only the thinner parts transmitted through the narrower extremities of the pulmonary artery; for he remarks, that the same appearance is observable as well in a peripneumony as in a pleurisy. Perhaps the same collection may happen in those cases where a pleurisy accidentally supervenes other fevers, as we observed from Sydenham in §. 880: For that very attentive physician remarks, that such pleurisies sometimes will not admit of repeated blood-letting; namely, when the nature of the distemper, in which these pleurisies happen, is itself averse to any relief from the lancet. Bag-

[e] Cum vero, quæ ad latus impacta sunt, putruerint, et per sputum ejecta fuerint, convalescunt. Quod si et antiquum multum ad latus impactum sit, et aliud insuper accesserit (προσεπιγενηται) statim intereunt. *Hippoc. De Morbis, lib.* i. *cap.* 11. *Charter. Tom. VII. p.* 546.

[f] Prax. Med. lib. i. cap. 9. p. 37.

livi, in like manner, adviſes to refrain from bloodletting, at leaſt from a repetition of it, when the blood appears to have no inflammatory or ſizey cruſt on its ſurface.

If the ſpitting be ſuppreſſed while the diſpnœa continues.] We have before ſeen (§. 876.) that a dry pleuriſy, in which the patient has no expectoration, is by all phyſicians condemned; it is therefore a bad ſign if the ſpitting becomes ſuppreſſed. The ſpitting indeed ceaſes of courſe, when the matter of the diſtemper has been evacuated. But then if the difficulty of breathing continues or increaſes, with a ſenſe of fulneſs in the habit, and *heavineſs at the breaſt*, it plainly demonſtrates that the ſpitting does not ceaſe from a want of the matter exhauſted, but from the retention of it in the lungs, from whence in a ſhort time ſuffocation may be feared; and this more eſpecially when a *ſmall* pulſe ſhews there is but little blood ſent through the lungs to the left ventricle of the heart. But when the pulſe is alſo at the ſame time both *quick* and *hard*, with *intenſe heat* of the body, there is then danger that the violent inflammation will in a very ſhort time turn into a gangrene, in the manner we before explained at §. 388. But in ſuch a gangrenous pleuriſy, there is uſually a very violent heat perceived about the vital viſcera, while the extremities are ſcarce warm, or are even frequently cold. Moreover, Galen informs us, as we ſaid at §. 883, That no pleuritic patient recovers when the pulſe is both *hard*, *ſmall*, and *quick*, at the ſame time.

For theſe ſymptoms, growing worſt upon the fifth day, bring death upon the ſeventh.] With reſpect to this prognoſis it is to be obſerved, that thoſe maladies are called *acute* which run through their courſe *ſwiftly* and with *danger*: but that thoſe are the *moſt acute* which do not ſurpaſs the fourth day; as thoſe which hold on till the ſeventh day are called *peracute*; while the reſt, if they exceed not the twentieth day (§. 564.) are only called *acute*. But this kind of pleuriſy is none of the worſt becauſe a ſpitting attended, which is afterwards ſuppreſſed; and therefore ſuch a pleuriſy ends not within

within the four first days. But if this suppression of the spitting takes place upon the fifth day, and all the symptoms become then exasperated, death is afterwards the consequence upon the next critical day of the distemper, namely, upon the seventh; which is the most remarkable among the critical days, as we proved more at large at §. 741.

If the urine be very red, obscure, *&c.*] Healthy urine slowly evaporated through all the degrees of heat, turns to a high red colour; and therefore it follows, that the greater part of the diluent vehicle, or water of the urine, being evaporated, the colour is more heightened: and the truth of this is experienced by healthy persons, who sweat much by the severe summer-heats, whereby their urine is discharged of a much higher colour. But healthy urine left to itself, in a vessel perfectly clean, acquires by length of time a dark or obscure colour, and deposites gross fæces to the bottom [g]. Besides this, the oily fat of the body being dissolved and made acrid by the febrile heat, conduces much to heighten the colour of the urine when it escapes from the habit by these passages; whence a red urine makes a sign of great inward heat (see §. 673.) Such a urine therefore denotes an imperviousness of the humours, a dissipation of their watery parts, and a greater degree of acrimony inclining them to a putrid or corrupt state, with a violent febrile motion of them. But at §. 388. it was proved, that the presence of those symptoms which this urine denotes, points out that an inflammation tends to a gangrene. But in the Coan Prognostic [h], wherein this whole presage is given us, the urine here mentioned is, from its intense red colour, denominated (ὑρον αιματωδες) *blood-like urine;* and because at the same time it has some contents of an obscure or browniſh colour, (which is a sign of an incipient putrefaction), it is also called (ζοφωδες) *misty* or *cloudy*: and as putrescent urine deposites gross fæces to the bottom, so this urine has a various, unshapen, or unequal sediment. But a black sediment denotes

g Videatur de his H. Boerh. Chem. Tom. II. p. 321. h N° 581. Charter. Tom. VIII. p. 886.

that there is a gangrenous diſpoſition of the humours, as was ſaid more at large in the commentaries to §. 741, where we treated of the preſages from a black urine; ſuch an urine, therefore, is ſtill of a more dangerous import. But Galen [i] obſerves to us, that a greeniſh colour of the urine is a forerunner to one of a black colour, and therefore points out the malignity of the diſtemper. Yet Hollerius [k] affirms he has ſeen violent pleuriſies terminated by copious, thick, and black urines. But at §. 741, it was proved, that a black urine, which is alſo thin and ſmall in quantity, is abſolutely a fatal ſign; for it then denotes that there is a corruption of the humours preſent, and yet that there is no diſcharge of the corrupted parts from the habit. But ſince the beſt ſediment of urines is that which appears white, light, and uniform; therefore ſuch as is commonly called *furfuraceous* or brany, being quite contrary to this, is juſtly condemned by Galen [l] as a ſign of great waſting, and of burning heats, by which ſmall parts are rubbed off from the ſolids of the human body, and diſcharged in the urine.

If it be mild in the beginning, *&c.*] See what has been ſaid upon this preſage in the comment to §. 883.

If the back, the ſide, and the ſhoulder, *&c.*] It was ſaid before (§. 888, n. 5.) that a pain of the ſide ſerviceably removes to the ſhoulder, arm, or back; but then it was under a ſuppoſition that the ſame relieved the malady, and more eſpecially rendered the breathing eaſier: But, in the preſent caſe, the greateſt anguiſh remains; and therefore the matter of the diſtemper is not tranſlated to parts where it will be leſs miſchievous, but, the primitive malady continuing, the inflammation is thus propagated or ſpread, and affords a very bad ſign. But what a bad omen is afforded from a moſt fetid or ill-ſmelling flux from the bowels, was but lately declared under the preſent aphoriſm. This prognoſis is indeed ſomewhat differently expreſſed in the text of Hippocrates. For his words are: *But when ſome*

i De Criſibus, lib. i. cap. 12. Charter. Tom. VIII. p. 395.
k Jac. Holler. Comment. in Coac. Hippocrat. p. 1047.
l Vide locum modo citatum.

me of these pleuritic patients have a redness that invades their back, a heat in their shoulders, and uneasiness when sitting upright, while their bowels are disturbed with a green and ill-smelling flux; such are usually extinguished on the twenty-first day of the malady, by the said flux; or if they survive that time, they afterwards recover [m]. In the Coan Presages [n] there is also given a prognostic of the same kind, but the text seems less complete.

..901*. IF the pleurisy be dry, from want of strength in the patient; from the severity of the pain; from the unfitness of the matter to be expelled; from the over-rigidity, structure, or crisping of the vessels; or from too lavish use of heating medicines or aliments; the pain at the same time inclining to the superior parts of the body: if the tongue appears immediately dry, covered with sordes or filth, of a livid or blackish colour, with frothy bubbles of the same hue: if any, or all of these signs concur together, the malady is generally in itself mortal, or not easily curable; but for the most part takes off the patient by a gangrene of the affected side, and of the adjacent lungs.

That a *dry* pleurisy is always worse than one *moist*, was shewn before at §. 876. But a pleurisy is dry either from a deficiency of matter to be thrown out by spitting; or because the spitting cannot be expectorated, on account either of the patient's weakness, or from the severity of the pain: either of which denote the worst state of the malady. Thus, in dying persons, there is a disagreeable rattling heard in the air-vessels of the lungs, while the wind-pipe is indeed filled

[m] Quum vero harum pleuritidum aliqua laboranti dorsum rubescere contigerit, et humeros incalescere, et erectum sedentem gravari, et venter exturbetur viridi et graveolenti admodum (excretione,) hic ob ventris ejectionem primo et vigesimo die moritur, quem si effugerit, convalescit. *De Morbis, lib.* iii. *cap.* 15. *Charter. Tom. VII. p.* 591.

[n] No 380. Charter. Tom. VIII. p. 873.

led with a tough or glutinous humour, but the powers are now reduced too low to evacuate what is collected in the lungs. But when the ſpitting is hindered from being expectorated to avoid the ſeverity of the pain, if the violence of the inflammation be not immediately reduced by ſuitable remedies, it will ſoon terminate in a gangrene.

But that the matter of the diſtemper may be expelled by a ſpitting, it is neceſſary either for the ſaid obſtructing or inflammatory matter to be reſolved, or for the ends of the veſſels to be dilated ſo as to tranſmit what there heſitates: therefore the more compact the inflammatory matter, and the more robuſt or contracted the veſſels, ſo much the more difficultly will the ſpitting be able to come forth for relieving the malady. Hence Hippocrates pronounces, "That denſe and "much exerciſed bodies are ſooner killed by pleuri-"tic and peripneumonic diſeaſes, than thoſe which "are unexerciſed[o]." For in ſuch the humours are more compact or denſified; and the veſſels, being more ſolid or firm, make a greater reſiſtance in their dilatation: Upon which points we treated before in the hiſtory of Inflammation, at §. 386.

But ſince pleuriſies ſo frequently ariſe from taking cold after the body has been heated by labour or exerciſe, it has been cuſtomary with the ignorant commonalty to treat the onſet of this malady with the moſt heating and ſpirtuous medicines before they venture to call a phyſician; and this in order to diſperſe a ſuppoſed flatulency in the blood, which they imagine to ariſe from the taking cold, and to be the cauſe of this pain. But ſuch hot medicines criſp or dry up the ſolids, and coagulate the fluids, ſo as greatly to increaſe the motion of the fever; and therefore are here in the laſt degree miſchievous. The celebrated Triller relates ſeveral caſes which ſhew with how much ſeverity this malady has afflicted thoſe to whom vinous ſpirits or other heating medicines have been given in the beginning. I myſelf obſerved a pleuriſy fatal within thirty-ſix hours in a man of about thirty years old; to whom,

[o] Coac. Prænot. nº 398. Charter. Tom. VIII. p. 875.

-hom, upon the firſt attack of the pain, was admini-
ered three ounces of very ſtrong ſpirituous water di-
illed from lovage-ſeeds: for although this unhappy
ıan was plentifully bled within the ſeventh hour from
ıe invaſion, and the lancet was again repeated within
few hours after; yet he received no relief, even tho'
ıe other moſt effectual remedies, both external and
ıternal, were not neglected. For here the pain of the
de continuing equally ſtubborn and ſevere, ſpread all
ver the breaſt as high as the throat, with a moſt dif-
cult breathing and a quick ſmall pulſe; after which a
elirium and death ſoon followed. Here it was obſer-
able that the pain ſpread upwards; and, from its great
verity, the patient could never bring up any of the
pitting. From this caſe I learned why Hippocrates
ı the ſame preſage joins theſe two ſigns together;
amely, an abſence of the ſpitting, and a ſpreading of
ıe pain upwards: *Dry pleuriſies that have no ſpitting*
re extremely difficult of cure: Thoſe are alſo to be dread-
l in which the pains ſpread upwards [p].

If the tongue be immediately dry, *&c.*] Here con-
ılt what was before ſaid of a dryneſs, foulneſs, and
lackneſs of the tongue, in an ardent fever, at §. 739.
ut theſe ſigns plainly denote an inclination of the
alady to a gangrene. But Hippocrates [q] alſo takes
otice of the like livid bubbles appearing upon the
ngues of pleuritic patients, and ſays they are ſuch as
ſemble thoſe which ariſe from red-hot iron quench-
l in oil; yet he derives no very fatal event from this
gn, only preſages from it a more tedious or difficult
riſis, with a bloody ſpitting. However, in that place
admoniſhes, that the tongue of pleuritic patients
ught to be inſpected. And from another paſſage of
m it appears, what good grounds we have to hope
r ſucceſs from a moiſt appearance of the tongue and
ternal parts of the mouth, in the like febrile diſea-
s: "But if the parts of the mouth appear moiſt, and
the ſuitable diſcharges are expectorated from the
"lungs,

[p] Pleuritides ſiccæ, ac ſine ſputo, difficillimæ. Horrendæ quoque, in
ibus dolores ſurſum (vergunt.) *Cnac.* nº 381. *Charter. Tom. VIII.*
873.

[q] Ibidem, nº 384. et De Morbis, lib. iii. cap. 15. Charter. Tom. VII. p. 591.

" lungs, the neceſſary treatment is then, in a word, to " give plenty of thin ſuppings: for the ſooner and the " more all the parts are ſeen moiſtened with tranſuding " humidity, the more ſpeedily do they declare for a " criſis; but when their humidity appears later, or in " a leſs degree, they denote a more backward criſis[r]."

Now all the ſigns of the above aphoriſm are marks of the worſt-conditioned pleuriſy, and afford a preſage ſo much more dangerous as a greater number of them concur together at one time. But ſince the lungs are ever contiguous with the pleura, therefore they may be eaſily affected, if the pleuriſy ends in a gangrene. Add to this, in the worſt kind of pleuriſies, the lungs themſelves often begin to be inflamed at the ſame time, from the ſuffocated breathing, which hinders the free tranſmiſſion of the blood expelled from the right to the left ſide of the heart.

§. 902. BUT when the ſigns above mentioned (§. 901*.) point out that a gangrene is about to invade theſe parts (§. 899.), then the moſt powerful remedies are immediately, and at the ſame time, to be put in practice, without farther truſting to ſlighter remedies, or to the vital powers in the patient, provided theſe laſt are not exhauſted.

For now death ſtands at the door: therefore the phyſician muſt either give over his patient to the natural fate; or with courage and expedition put the moſt potent remedies in force at one and the ſame time, after having firſt given to the patient's friends a ſuitable notice of the doubtful ſucceſs.

§. 903. THEREFORE in this caſe (§. 902.) immediately procure deep eſchars or ſcabs to be burnt into the affected parts by the actual cautery or ignited iron; and afterwards let them

[r] De Victu Acutor. Charter. Tom. XI. p. 20.

nem be dreſſed with the ſtrongeſt digeſtives or
nundifiers, and be continually kept warm with
ne moſt penetrating foments; and then let the
atient be plentifully ſupplied with draughts that
re powerfully diluent, opening, and oppoſite to
utrefaction: for by theſe means, if by any, one
ay be able to moderate or ſuppreſs the miſchiefs
f the incipient gangrene.

Since in a caſe of this kind, where a gangrene is at
and, or already begun, there are no hopes left of a
eſolution or a critical evacuation; the only iſſue one
an hope for, is, that by a formed ſuppuration the
rude inflammatory humour may be turned into pus,
nd ſeparate from the other living parts what is al-
eady corrupted by a gangrene. But when ſuch a malady
s a gangrene occupies any outward parts of the body,
re ſee that thoſe parts melt into a putrid or cadave-
ous filth, until the bounds thereof are perfectly de-
urated or cleared. Unleſs therefore all endeavours
re uſed to procure a diſcharge outwards to the ſaid
angrenous filth, it will corrupt or putrefy every thing
bout it. For this reaſon deep eſchars by the actual
autery are recommended, that the ſuppreſſed heat
nd vitality of the parts may be thereby recalled; and
iat, when the ſcabs are afterwards digeſted off, an
pen way may be afforded for the gangrenous filth and
hor to eſcape outwardly. It is true, this is a violent
nd extreme remedy: But then to extreme maladies
roportionable means are to be applied, as Hippo-
rates [s] hath very judiciouſly pronounced; who alſo
another place very roundly recommends to us burn-
g as the laſt remedy, when he ſays, *Thoſe maladies*
hich yield not to medicaments, are yet cured by the knife;
nd thoſe which yield not to the knife or inſtruments, are
be cured by fire or cauteriſation; but ſuch as are not to
ſubdued by fire, are to be treated as incurable [t]. Cer-
tain

[s] Aphor. 6. ſect. i Charter. Tom. IX. p. 11.

[t] Quæ medicamenta non ſanant, ferrum ſanat; quæ ferrum non ſa-
t, ignis ſanat; quæ vero ignis non ſanat, illa infanabilia ducenda ſunt.
phor. 8. *ſect.* viii. *Ibid. p.* 344.

tain it is, that the ancient phyſicians attempted the cure of many diſeaſes by the actual caurery; and ſometimes they uſed it alſo to haſten the recovery from ſuch maladies as were ſlowly curable without it: for thus they cauteriſed the breaſt and back for diſorders of the thorax [u]. But I do not remember to have read that Hippocrates expreſsly made uſe of this practice to relieve a gangrenous pleuriſy. But the advice of Aretæus, in the cure of a pleuriſy, comes ſomewhat near to this practice [w]; for he directs a very large and broad cupping-glaſs to be applied with much flame to the painful ſide, being careful not to preſs the glaſs too hard or cloſe upon the ſide, that the air may have a free acceſs, and continue the flame longer: but when the flame is out, he orders the place to be ſcarified, and would have the ſmall wounds rubbed with ſalt or nitre to irritate them, when the patient's ſtrength and courage will ſupport that practice. The day following he again cupped upon the ſame part, as he ſays, *ut ex vulneribus tenuis quidam ichor extraheretur*, "to "extract a kind of thin ichor from the inciſions:" And then adds, *(neque enim ſanguis aut alimentum, ſed ichor emanat; atque id quidem facito, cum prius vires exquiſite perpenderis:)* "that neither blood nor nutritious "lymph, but an *ichor* makes up this diſcharge; which "you are to continue diſcretionally, agreeable to the "patient's abilities before duly conſidered."

But concerning the remedies both external and internal, which conduce to a cure in this caſe, we treated before in the chapter upon a Gangrene (§. 419). In our Author's Materia Medica, at the preſent number, may be ſeen a form for ſuch an antiſeptic decoction as is here recommended; but the quantity of oxymel of ſquills ſeems there too large, as it may excite a vomiting; or probaby it is a miſtake, and we are to read *oxymellis ſimplicis*, inſtead of *oxymellis ſcillitici*.

§. 904. BUT if the inflammatory cauſe, being extremely violent, ſhall have occaſioned

[u] Vide Hippocrat. de internis affection. cap. 9. Charter. Tom VII. p. 644. et De morbis, lib. ii. cap. 21, 22. Ibid. p. 573, 574, et pluribus in locis. [w] De Curat. Morbor. Acutor. lib. i. cap. 10. p. 92.

oned the pleuritic ſymptoms to take place in the ighеſt degree, and maintain them ſo, inflexible o all the helps of nature (§. 887, 888.) and o every antipleuritic remedy (§. 890, 903.); and f theſe afterwards ceaſe ſuddenly without any aparent cauſe (at leaſt ſo far as they come from an nflammation), leaving the pulſe ſmall, quick, and ntermitting; the breathing ſhort or ſmall, and uick, with a cold ſweat; it is by theſe evident, hat a gangrene has now got poſſeſſion of the inamed parts. But from this fatal event a delium ſoon follows, with death immediately after ; more eſpecially when the thorax or breaſt apears of a livid colour at the ſame time: and the onſequence is alſo the ſame, if the patient, who ad a yellowiſh coloured ſpitting, is ſuddenly aſed of his pain without any apparent cauſe; for hen a ſimilar and fatal delirium attends, as the eſſenger of death from a gangrene.

The very intenſe ſymptoms that before attended now nform us the pleuriſy is of a malignant diſpoſition: ut if thoſe ſymptoms go off ſuddenly without any gns of the matter being either corrected or reſolved, e are then aſſured that this happens becauſe the inammation has turned into a gangrene; for in that ſe we have ſhewn the ſymptoms of inflammation rminate, §. 388. Theſe are the much noted, but ceptive ſhews of relief or recovery, that are often ſtructive to the reputation of leſs ſkilful or leſs atntive phyſicians; for that, when the patient ſeems all reſpects out of danger, he often expires within lf an hour afterwards. But as it is uſual for the ry ſame caſe to happen in other inflammatory diſeaes of the viſcera; therefore Hippocrates [x] has laid this wn in a general practical axiom, as follows: *We ght not to confide in thoſe changes which ſhew no reaſon for*

[x] Non ſecundum rationem levantibus, non oportet credere. *Aphor.* 27. 7. 2. *Charter. Tom. IX. p.* 69.

for their relieving a malady. For when the pain
is relieved from a good cauſe, the vital actions incre
the pulſe feels more equal and ſtrong, and the bre
ing is more free: but in the caſe before us, the
tient breathes indeed without pain, but very q
and ſhort, inſpiring but little air at a time; alſo
extremities uſually appear livid, the viſage ſeems
daverous, and the pulſe is felt very weak, quick,
interrupted; all which point out fatality. Conce
ing theſe caſes, therefore, it is a very neat and gen
prognoſtic, which Hippocrates in another place g
us: *Symptoms that are malignant or miſchievous, b
relieved without the proper ſigns, preſage death*[y].
in the preſent caſe a ſlight delirium uſually attend
the ſame time, as we ſaid before in the hiſtory o
Gangrene, §. 432.

More eſpecially if the thorax or breaſt appears o
livid colour.] For this (as we have ſeen, §. 429, n
is one ſign of a gangrene, which hath been remark
by Hippocrates, where he cautions againſt allowi
too groſs a diet to thoſe who are ill of the worſt k
of pleuriſy; for thus he has expreſſed himſelf: *But m
eſpecially from theſe, and other cauſes of the like kind, th
who are allowed to feed upon the whole ptiſan* (i. e. *bar
and all*) *are carried off by the ſeventh day, or ſoone
ſome of them dying delirious, and others ſuffocated wi
an orthopnæa, and rattling in the lungs. But ſuch
were thus ſuffocated, the ancients eſteemed blaſted fro
heaven; as well on account of the ſuffocation itſelf,
from their obſerving the ſide of the deceaſed to be livid
if from a ſtroke*[z].

Thoſe ſtruck with lightening are obſerved to ha
ſuch a livid or black and blue place in the outwa
ſkin; from whence the very learned Triller[a] is led t
believe that the word (πλαγη) *ſtroke* is here uſed to d
not

[y] Pernicioſa ſine ſignis levantia mortem ſignificant. *Prædict. lib.
textu* 52. *Charter. Tom. VIII. p.* 734.

[z] Has igitur ob cauſas, et alias hujuſmodi etiam magis, qui tota ut
tur ptiſana, ſeptimo die, ac celerius moriuntur: alii quidem mente la
alii vero orthopnœa et ſtertore ſuffocati. At ſane hos antiqui ſiderato
(βλητους) exiſtimaverunt, tum ob hoc maxime, tum non minime, quo
mortuis latus lividum deprehenditur, ſimile plagæ. *De Victu Acutor
Charter. Tom. XI. p.* 27.

[a] De Pluritide, p. 173.

ote the ſtriking with thunder or lightning; perhaps
: alſo implies a contuſion, after which it is cuſtomary
or the ſoft parts to appear livid. Perhaps this may
e the reaſon why the poets have feigned Æſculapius
o have periſhed by a ſtroke of thunder from Jove;
nce Suidas [b] has recorded that he was miſerably preſ-
ed by the malady, which his ſons (the phyſicians) call
peripneumony. Cœlius Aurelianus [c] obſerves to us,
nat, in thoſe deceaſed of this malady, the pleura is of-
en found black; and that it was cuſtomary to imagine
ach were poiſoned, becauſe the bodies of thoſe who
ere deſtroyed by poiſon uſually appeared of this livid
olour.

If the patient who had a yellowiſh ſpitting, *&c.*] This is a prognoſtic of Hippocrates which we before mentioned §. 772, whoſe words run thus: "If the pain of a pleuriſy, after yellow-coloured ſpittings, ſhall go off without reaſon, the ſick are rendered light-headed or raving [d]." For the pain of the ſide thus ſud-enly removed, without good omens, affords here one f the principal indications of a gangrene already for-ed: though alſo ſometimes, by a bad tranſlation, the nflammatory matter is thrown upon the brain; and nen likewiſe the pain of the ſide will ceaſe, as we iewed in the chapter upon a frenzy. At the ſame me we are alſo to obſerve, that a delirium will of-n follow a gangrene that has taken up its ſeat in ny other part of the body, as we declared above.

. 905. FINALLY, A pleuriſy terminates, di-rectly of itſelf, in death, whenever e cauſes thereof (§. 881.) are ſo violent, that ie conſequent pain ſtops or ſtifles the whole mo-on of the thorax; which, by hindering the cur-nt of the blood through the lungs, ſoon creates peripneumony (§. 848.) that proves moſt expe-tiouſly fatal.

[b] In voce Ασκληπιαδης Tom. I. p. 458. [c] Acutar. Paſſ. lib. ii. . 16. [d] Prorrheticor. lib. i. Charter. Tom. VIII. p. 767. et ac. Prænot. nº 418. ibid. p. 876.

This is of all ways the quickeſt by which a pleuriſy terminates in death. For it is demonſtrated in phyſiology, that a free reſpiration is neceſſary in man after the birth, in order to give the blood a current through the pulmonary arteries, which in the ſtate of a fœtus paſſed by another way. If therefore the ſeverity of the pain ſuppreſſes the dilatation of the thorax, the blood is then too much collected within the pulmonary arteries, from whence only the thinner parts are expreſſed into the veins, while the thicker blood is heaped together, and brings a ſpeedy ſuffocation, as we ſhewed at §. 877, 883.

Aretæus has remarked this way of terminating a pleuriſy, although he does not appear to have been ſo well acquainted with the cauſe. For his words are: *Sometimes indeed, within this interval, the whole ſpace of the lungs is filled up; for the lungs draw the matter into themſelves, by being hot, light, and ſpongy, and by moving themſelves towards the adjacent matter to be drawn; and then by a tranſlation of the malady the patient is ſuddenly ſuffocated*[e].

§. 906. FROM what has been ſaid the reaſon appears, Why a peripneumony always comes upon the back of every ſevere pleuriſy: Why it is generally fatal to old people, to women with child, and to thoſe that are in child-bed or lying-in: and, Why binding up the thorax with a roller ſo much relieves the pain, as to render the malady ſupportable.

Why a peripneumony on the back of a ſevere pleuriſy, *&c.*] This was ſhewn before, under the laſt aphoriſm (§. 905.)

Why generally fatal to old people, *&c.*] How rigid the whole body is rendered by decrepid old-age is known

[e] Nonnunquam ſane intra hujus temporis ſpatium omnium in pulmonem tranſitus eſt: trahit enim pulmo in ſe ipſum, et rarus et calidus exiſtens, et ad proxima trahenda ſe commovens tuncque morbi tranſpoſitione repente homo ſtrangulatur. *De Cauſis et Signis Morborum Acutor. lib.* i. *cap.* 10. *p.* 9.

known to every one, insomuch that many of the larger arteries are found even bony in such old subjects; and the blood, commonly grown more sluggish or unflexile in old age, has a less proportion of serum to its cruor or red mass: But now, to resolve an inflammation, there are required an easy motion or dilatability of the vessels, with a due proportion of the diluent vehicle (see §. 386.) both which means are wanting in old people. But since a free discharge by spitting is often of so much service to relieve a pleurisy, and asthmatical old folks generally breathe with difficulty, they will be on that account very unable to expectorate the tough phlegm by incessant coughing; which is again another reason, why a pleurisy is more dangerous in old persons. Add to this, that old folks have rarely the strength to bear the repeated blood-lettings that are so necessary to the cure of a violent pleurisy.

Again Hippocrates[f] has admonished us, that old persons are not so often seen afflicted with acute diseases; and Galen[g], in his comment upon the same place, tells us, "If old persons are invaded with such a violent "fever as we meet with in youths, which is rarely the "case, the end of such a fever will be altogether mis-"chievous or fatal to the patient; for that the effici-"ent cause here producing the fever must be immense-"ly great."

And indeed Hippocrates[h], reckoning up the distempers of old age, mentions no other acute disease besides an apoplexy. This is the more remarkable, because Aretæus[i] makes old folks more liable than others to pleurisies; and even says, that they oftener recover from them. But then he seems to have pronounced this rather from fancy or opinion, than from observation or experience: "For (says he) as the greatest seve-"rity of the winter is more apt to produce the distem-"per, and the spring less; so I presume a pleurisy is fre-"quent to old age, but not at all to childhood." But having a little before remarked, that a pleuritic patient

f Aphor. 14. sect. i. Charter. Tom. IX, p. 24. g Ibidem, p. 28.
h Aphor. 31. sect. iii. ibidem, p. 128. i Morbor. Acut. lib. i. cap. 10. p. 9.

is often ſtrangled ſuddenly, when the lungs draw in the matter of the diſtemper (*i. e.* when a peripneumony comes upon the back of a pleuriſy;) he adds the following reaſon why old perſons oftener recover than children and adults: "For a great inflammation cannot eaſily be excited in a dry or withered body; nor "can the diſeaſe be ſo eaſily tranſlated upon the lungs: "for the lungs being in theſe perſons colder than in "thoſe of lower ages, and their breathing ſmall; "therefore their attraction, or diſpoſition to receive "the matter of the diſtemper, is in ſuch of all the "weakeſt." From hence then it will eaſily appear, that the ſentence pronounced by Hippocrates and Galen, ought to be preferred before the opinion of Aretæus; namely, that old perſons are more rarely invaded by a pleuriſy, but are more commonly taken off by it whenever it ſeizes upon them. For, as we ſaid before (at §. 879.) Hippocrates [k] lays it down for a general rule in practice, "That in diſeaſes, ſuch are leſs in "danger, whoſe conſtitution, age, courſe of life, with "the ſeaſon of the year, are the moſt familiar with "or inclined to breed the diſtemper, beyond perſons "who have no ſuch relation or familiarity betwixt the "malady and thoſe general or more remote cauſes."

Why to women in child-bed, *&c.*] Practical phyſicians well know, that a violent fever ariſing near the time of delivery commonly makes a ſuppreſſion of the lochial flux; but what dangerous events are threatened by ſuch a ſuppreſſion will be declared hereafter, when we come to treat on the diſeaſes of women in child-bed. An unhappy caſe of this kind I ſaw in a gravid woman ſeized with a ſharp pleuriſy about twenty four hours before her delivery: ſhe had a dead birth, after which the lochial flux ſtopped; when the pain was ſomewhat abated by blood letting, it immediately returned again with new ſeverity; and though by repeated veneſections the pleuriſy was relieved, yet the fever remained equally violent or acute, the lungs began to ſtuff up or obſtruct, and on the ſeventh day ſhe expired. But what extremities of pain this poor woman

[k] Aphor. 34. ſect. ii. Charter. Tom. IX. p. 75.

woman ſuffered from the pleuriſy, while ſhe was obliged to exert the efforts of her breathing to promote the birth of the fœtus, one may more eaſily imagine than deſcribe. Yet that a pleuriſy is neither always nor abſolutely fatal in a lying-in, appears from many obſervations; ſome of which we before related, in our comment to §. 890.

Why to women with child.] That a pleuriſy ſhould be dangerous to women far gone with child, will hardly ſeem ſtrange to any who conſider, that the acute fever, which attends this malady, will go near to cauſe a dangerous miſcarriage; and likewiſe, that the ſudden depletions of the veſſels, which it requires, by repeated blood-lettings, cannot be ſafely practiſed in ſuch women. Moreover, the abdomen being much diſtended in ſuch gravid women, their breathing is very difficult, as the diaphragm can deſcend but for a ſmall ſpace, which renders a greater dilatation of the breaſt neceſſary; but that being now hindered by the pleuritic pain, the greateſt anguiſh or oppreſſions enſue, from whence there is reaſon to fear a fatal peripneumony will ſpeedily follow. But in our comments to §. 888, no 6. we remarked, that a pleuriſy is not thus always or abſolutely fatal in gravid women; having in the ſame place given an inſtance of one who happily recovered with a diſcharge by ſpitting. Nay, I even cured another gravid woman twice of a pleuriſy; once in her ſixth month, and again in her eighth: but at both thoſe times ſhe had a happy delivery, and went very well through the whole courſe of her lying-in.

Why binding up the thorax with a roller, *&c.*] When we breathe, the ribs are drawn each way one from the other; and the diaphragm at the ſame time urging downwards, the capacity of the breaſt becomes enlarged, while the belly is raiſed or thruſt outward. But when a pleuriſy attends, we have ſeen that the ribs cannot be drawn one from another without extreme pain: and therefore when the thorax is ſo bound up with rollers that the ribs become immoveable, while the abdomen is left free from any compreſſure, in that caſe the dilatation of the breaſt in breathing is performed by the diaphragm

phragm alone, descending towards the abdomen, without any stretching of the intercostal spaces; by which therefore the patient receives considerable relief of his pain, and there is then less danger of the lungs being stuffed up with impervious blood from the impeded breathing. But in the mean time it must be remembered, that thus only the pain itself is abated, without any removal of its cause; to which therefore the most efficacious remedies are to be still applied, lest the inflammation here seated should turn to a suppuration, and lest the physician may mistakenly believe, that because the pain is thus relieved, the violence of the malady itself must be so likewise.

Of a PARAPHRENITIS.

§. 907. IF a painful inflammation, like that of a pleurisy, takes up its seat in that part of the pleura which is spread upon the diaphragm, or upon the mediastinum, it makes a desperate malady, which physicians have called a Paraphrenitis.

In our history of a pleurisy it was shewn, at §. 877. what a variety of parts this malady might occupy, since the pleura lines all the internal circumference of the thorax; and therefore an inflammation of the diaphragm, which separates the breast from the belly, properly belongs to a pleurisy. Yet it has been customary to give this malady a peculiar name; and, on account of some difference in the symptoms, to allot it a distinct place of treatment.

We read in Ruffus Ephesius [1], that the membrane which partitions off the lower viscera from those of the breast, is called *diaphragma* and *phrenes*: but we remarked at §. 771. that the ancient physicians usually added the termination *itis*, to the name of the part affected, when they intended to denote an inflammatory disease

[1] De Corporis Humani Partium Appellationibus, lib. i. p. 38.

diſeaſe of the part ſo named. By this rule, therefore, an inflammation of the diaphragm ought to be called *phrenitis*: But then this name being already adopted for another diſtemper, namely, when a conſtant and fierce delirium ariſes from the brain itſelf originally affected with an acute continual fever; therefore, for diſtinction's ſake, this malady is called *paraphrenitis*. It is true indeed, the prepoſition (παρα) *under*, prefixed to the names of diſeaſes, frequently denotes a leſs degree of their violence (ſee §. 783.): but paraphrenitis is no where found to denote a ſlighter kind of frenzy; for a ſymptomatical frenzy, or a febrile delirium, goes by the name of *paraphroſyne*.

Yet Hippocrates [m] has deſcribed an inflammation of the diaphragm under the name of *phrenitis*; but he firſt admoniſhes that there are others of the ſame name ariſing in different maladies: but the firſt, he adds, is to be cured like a peripneumony. Alſo Ægineta [n], and Trallian [o], have mentioned a phrenitis of the diaphragm, that ariſes not from any diſtemper of the head: although they appear not as the givers of this name peculiarly to this malady; only inform us, that it is to be diſtinguiſhed from a true frenzy, principally by its injuring the breathing. Nor is the name *paraphrenitis* to be found in Galen [p], where he treats of this malady.

§. 908. WHICH malady much more frequently occurs than is commonly ſuppoſed; although, when preſent, it be often either unknown, neglected, or elſe treated under the title of another diſtemper.

Since, therefore, there is mention made of this diſtemper in moſt of the ancient phyſicians, and the major part of the cauſes of a pleuriſy (§. 881, n° 2.) are diſpoſed to excite a like malady in the diaphragm, more eſpecially a filling of the ſtomach with large draughts

[m] De Morbis, lib. iii. cap. 9. Charter. Tom. VII. p. 586.
[n] Lib. iii. cap. 6. p. 28. [o] Lib. i. cap. 13. p. 45. [p] De Locis Affectis, lib. v. cap. 4. Charter. Tom. VII. p. 488.

draughts of cold liquors; it ſeems ſurpriſing that this diſtemper ſhould be ſo rarely complained of, or deſcribed in common practice; in ſo much that Peter Salius ranks it in the claſs of diſeaſes that are not treated of by common practioners: At leaſt it is certain, that the ſituation of the diaphragm, and its whole ample extent, is not clearly known to every one; for, beginning from the loins, it aſcends ſo high as to cohere with its tendinous part to the pericardium, and partitions off by a very broad ſurface the thorax from the abdomen. In the ſplendid anatomical tables of the celebrated Albinus, there is a figure of the diaphragm in its natural ſituation, which one may better learn from thence than from any deſcription [q]; and from whence it will not appear wonderful if an inflammation of the diaphragm is ſometimes taken for a malady in ſome of the other parts. However, ſuch a miſtake has been commonly of no fatal conſequence with reſpect to the cure; as it requires almoſt the ſame treatment as a pleuriſy itſelf, which we ſhall ſhew at §. 911. From thence alſo it will appear, that various ſymptoms may ariſe according as different parts of the diaphragm are occupied by the phlegmon. We ſee for certain, that it grows to the pericardium; tranſmits or gives a paſſage to the gula, aorta, vena cava, *&c.*; lies cloſely incumbent about the liver, ſpleen, kidneys, *&c.*; from whence an inflammatory ſwelling formed in this or that part of the diaphragm, may excite various maladies, by injuring one or the other organ that lies next to it. But the principal or moſt univerſal ſigns are reckoned up in the aphoriſm following.

§. 909. A PARAPHRENITIS is known, From an acute continual fever, with an ardent or inflammatory pain of the affected part of the diaphragm, which by its nervous membranes can hardly bear it; and this pain greatly increaſes by inſpiration, coughing, ſneezing, filling

[q] Tab. Muſculorum iv. et Hiſtor. Muſc. lib. iii. cap. 81.

ing of the ſtomach, reaching, vomiting, compreſſing or ſtraining of the belly at ſtool or in diſcharging the urine: the breathing is hereby rendered high up in the breaſt; ſmall, quick, and ſuffocative; performed by the ribs or breaſt only, while the abdomen continues unactive: there is a conſtant delirium; a drawing inwards of the hypochondria; a ſardonic, or convulſive laughter; a convulſion, a raving, and a gangrene.

That a fever attends in every inflammation, was ſhewn before at §. 382, no 8; and in the ſame place it was obſerved, that the fever is ſo much more violent in proportion as the irritation of the fibres is greater in the parts inflamed. Now the greateſt irritation of all ſucceeds in tenſe or ſtretched membranes. Hence it is that ſo violent a fever often ariſes from a whitlow of the finger, and when the membrane that lines the auditory paſſage is inflamed; which laſt is certainly a dangerous malady, as Hippocrates hath admoniſhed us in his Prognoſtics. But the diaphragm is always in a ſtate of tenſion, even when it exerts no action. When the abdomen of a dead ſubject is laid open, while the thorax is left entire, it plainly appears in what manner the diaphragm forms a concave dome, with its convex part towards the breaſt; but ſo ſoon as the breaſt is perforated on each ſide to let the air paſs into the capacity of the thorax, the diaphragm, that was before tenſe and urged by the preſſure of the atmoſphere up into the breaſt, becomes flaccid [r]. But when the diaphragm contracts, ſo as to preſs down the contents of the abdomen, and enlarge the capacity of the breaſt for inſpiration, all its fibres are then ſtretched by the muſcular action, which will make a new increaſe or addition to the violence of the pain: Thus one may perceive how calamitous a caſe it is to have an inflammation ſeated in the diaphragm, which, whether in action or at reſt, is always in a ſtate of tenſion. Hence Hippocrates tells us, in treating

[r] Vide Herm. Boerhaave Inſtit. ſect. 607.

ing upon this malady [s], that such miserable patients are so full of pain that they cannot bear themselves to be touched.

What has been said will easily shew, how immensely the pain must be increased when the inflamed diaphragm is shooked by coughing or sneezing, or when by filling the stomach it is somewhat more extended or thrust up into the capacity of the breast; how dreadful or excruciating the pains must here be, when the muscles of the abdomen and the diaphragm are both convulsed together by a vomiting, (see §. 652); and how impossible it must be for such miserable patients to make the necessary discharges by stool and urine, in which the inspired air is required to be confined and compressed with a considerable force by the abdominal muscles and diaphragm.

But the breathing is here much more difficult than in a pleurisy, in which, the breast being retained immoveable by rolling up the sides or ribs with bandage (§. 906.) the respiration is then carried on by the contraction of the diaphragm only, with the motion of the abdominal muscles. But in this case the miserable patient, not daring to move the diaphragm, uses the utmost efforts to dilate the breast, and continue the respiration by moving the uppermost ribs only from each other: from hence proceeds that high or labouring, and small, but quick respiration, joined with a most uneasy sense of suffocation; concerning which, see the comment to §. 734.

But a constant delirium is a companion of a paraphrenitis, as Hippocrates [t] and Galen [u] have informed us, and as the universal consent of all practitioners after them has confirmed. Galen even pronounces that no other part of the body creates a constant delirium but the diaphragm; *adeo ut veteres putaverint, ab hac parte inflammata fieri phreniticos, atque ob eandam suspicionem eam* φρενας *appellaverint, tanquam sapienti parti (cerebro) conferat quidpiam;* "in so much "that the ancients believed the frenzies arose from "this

[s] Morbor. lib. iii. cap. 9. Charter. Tom. VII. p. 586. [t] Ibid.
[u] De Locis Affectis, lib. v. cap. 4. ibid. p. 489.

" this part inflamed; and from the ſame opinion, ſup-
" poſing it to have a particular conſent or communi-
" cation with the ſeat of wiſdom the brain, they there-
" for called it φρενας." But he obſerves the great difficulty of breathing here particularly points out this malady as differing from a true or primitive frenzy, in which laſt the breathing is commonly large and ſlow. But obſervations of the beſt credit teach us, that membranous parts, which are very tenſe and inflamed, after they have excited the moſt ſevere pains, produce a delirium of the worſt kind. Thus Hippocrates [w] obſerves, that from a ſharp ear-ach, with an acute continual fever, the patient is in danger of periſhing with a delirium. Perhaps the inflammation here ſeated ſo near the brain, might on that account be judged more apt to diſturb its functions; but we ſee, that even in a whitlow of the finger's end, that is of the worſt or moſt painful ſort, the patients are often delirious; which I myſelf have witneſſed (ſee §. 4.). Moreover, from the breathing ſo much hindered in this malady, the return of the venous blood from the head is intercepted, becauſe the right ſide of the heart cannot freely ſend its blood through the lungs to the left; and from hence again all the functions of the encephalon will be diſturbed.

But the hypochondria are here drawn inwards, becauſe theſe patients, to avoid the extremity of pain, uſe all their endeavours to hinder the diaphragm from deſcending at the time of inſpiration; for this reaſon, they in a manner hold it ſtill, drawn upwards: but by that means the liver, ſtomach, and ſpleen, are buried more under the ribs, or within the hypochondria. Even this retraction or ſinking in of the hypochondria is by Galen counted a pathognomic ſign of a paraphrenitis; for thus he expreſſes himſelf: *But to ſpeak concluſively in this matter, thoſe patients, who have an incipient inflammation in the diaphragm, have few or none of thoſe apparent ſymptoms, which we mentioned as the antecedents to an original frenzy: and again, the revulſion of the hypochondria upwards, immediately from*

[w] In Prognoſt. Charter. Tom. VIII. p. 671.

the first attack, is a sign peculiar to this affection of the diaphragm: but when the brain itself is affected, this last symptom does not appear in the beginning of the malady, but only after it has been completely formed for some time [x].

From what has been said, then, it is easily apparent, that an inflammation of the diaphragm, as a part that is always stretched, and in motion, may suddenly terminate in a gangrene; and then, before death, we know, convulsions and ravings are frequently observed. But now we are to consider the sardonic or convulsive laughter, that is usually observed as a peculiar symptom of this malady. It has been long ago, by the ancients, recorded, that the muscles of the face become so convulsed, from strong poisons lodged in the stomach, that the corners of the mouth or lips being drawn back, the visage begins to put on the appearance of a smile or incipient laughter; and this is a property which the writers upon the Materia Medica have ascribed to the marsh or water-crows-foot, that has a smallage leaf [*ranunculus paluſtris, apii folio*], which they have therefore also named *apium risus, et herba sardoa*, being a plant that has a force extremely caustic. Hence the term *sardonius* has been proverbially applied to those who incautiously laugh at what turns to their own prejudice. But very ancient observations likewise inform us, that such kinds of laughter are excited from injuries of the diaphragm. This has been recorded by Hippocrates [y]. And in Pliny [z] we read, "that in "battles, and in the shows of gladiators, wounds "through the præcordia brought death with a laugh-"ter;" but that by the term *præcordia* he understands the *diaphragm*, appears evidently in the same place. We see also, in sleeping infants, that the face is sometimes drawn into a smiling posture, when they are about

[x] Atque ut summatim dicam, eorum symptomatum, quæ phrenitidem antecedere diximus, aut nullum apparet, aut perexiguum in iis, quibus diaphragma inflammari incipit; ut rursus sursum revelli hypochondrium, illico ab initio septi transversi affecti, proprium sit: in cerebro vero (affecto) posterius accidit, non incipiente affectu, sed quum factus jam fuerit. *De Locis Affectis, lib.* v. *cap.* 4. *Charter. Tom. VII. p.* 490.

[y] Epidem. 5. textu 50. Charter. Tom. IX. p. 351. [z] Lib. xi. cap. 37.

about cutting their teeth; and thence it has been usual for their careful mothers to foretel convulsions, which indeed frequently follow after. From these particulars, then, it appears, that this is a symptom justly to be suspected.

§. 910. THE various terminations of a paraphrenitis are the same with those of a pleurisy (§. 884. 892. 896, 897. and 899.): only here the incessant and ample motion of the part, its being immediately necessary to life, composed of nervous and stretched membranes, render all those events more precipitate, and more fatal; and from hence may follow a purulent ascites.

All that has been advanced concerning the various endings of a pleurisy into health, another disease, or in death, may be also applied to the present malady. But that all those symptoms must be here more grievous or severe, and inclined sooner to mortification and death, than in a pleurisy, is easily apparent, from the action of the diaphragm, and its connection with the other adjacent parts. For this is required to be continually moving in respiration; the pericardium coheres with the tendinous part of the diaphragm, which therefore receives upon it all the strokes or vibration of the heart and the aorta; which last descends through its fibres, as do also the gula or œsophagus, and vena cava ascendens. Hence we may learn what a miserable condition the patient must be in who has an inflammation of the diaphragm, and how dangerous that case must be; the truth of all which is confirmed by the testimony of Hippocrates: *But this disease is fatal; for the patient dies of it by the third, fifth, or seventh day. But if it invades only in a slight degree, it comes to a salutary crisis like a peripneumony* [a].

But if a pleurisy ends in an abscess, it lets the matter

[a] Hic autem morbus lethalis est; tertio namque die, aut quinto, aut septimo moriuntur. Si vero leviter corripuerit, ut peripneumonia judicat. *De Morbis, lib.* iii. *cap.* 9. *Charter. Tom. VII. p.* 586.

ter into the capacity of the breaſt, and cauſes an empyema, if it does not point outward and diſcharge itſelf externally: But an abſceſs of the diaphragm may pour out its matter both into the capacity of the breaſt, and into that of the abdomen; in which laſt caſe it produces a purulent aſcites, filling the capacity of the abdomen, and diſtending it with matter there accumulated. But the malady is called an *aſcites* only when a mere watery ſerum is collected in the cavity of the abdomen, as we ſhall hereafter ſhew in the chapter on a Dropſy.

§.911. THEREFORE the treatment of a paraphrenitis requires the ſame diſtinctions and cautions, with almoſt the ſame remedies, as were before directed for a pleuriſy; excepting what relates to the difference of the part affected, which here admits not of topicals. But emollient clyſters, extending near to the parts affected, are often uſeful.

For the diſeaſe itſelf is of the ſame nature with a pleuriſy, from which it differs only by the part wherein it reſides. But fomentations, liniments, and plaſters, are here of leſs uſe than in a pleuriſy, becauſe they cannot be ſo nearly applied to the affected parts. But as clyſters, thrown into the bowels, may extend through the whole length of the colon, even to the end of the ilium, they may be here very uſeful; becauſe the colon, when it has reached as high as the liver and ſpleen, lies very near to the diaphragm; and therefore that inteſtine, filled with clyſters of emollient decoctions, will have the effect of a mild and diſcutient foment applied to the inflamed diaphragm.

§.912. BUT when the diaphragm, firſt inflamed, becomes afterwards ſuppurated; the abſceſs, breaking, pours out its contained matter into the capacity of the abdomen; wherein

wherein it is therefore collected or heaped together into a tumour, and, by putrefying and eating through the viſcera, brings on a miſerable conſumption, and death.

What miſchiefs are to be feared from the breaking of an abſceſs, and the pouring out of its matter into the capacity of the breaſt, we before (§ 894.) ſhewed; but the like effects will alſo enſue, when matter drains from an abſceſs of the diaphragm into the capacity of the abdomen. If now it be conſidered, that the diaphragm is always in motion, and that the circulation through its vaſcular fabric is from the vicinity of the heart very rapid; one may thence perceive, that a great quantity of matter muſt be there gathered in a ſhort time, and that the ulcer of the diaphragm will admit of no cure, more eſpecially when it is conſtantly watered with confined matter rendered acrid by long ſtanding. It is true, indeed, the matter poured out will, by its own weight, drain to the bottom of the abdomen; but being there long confined and corrupted, its putrid vapours will infect all the viſcera, and will itſelf corrode all the parts within its reach.

§. 913. IN this caſe then the malady, however well known, is wholly incurable.

There are indeed many reaſons which, if rightly conſidered, ſhew us the extreme difficulty of a cure in this diſorder, or which even perſuade us that a cure is altogether impoſſible: For a cure here requires a diſcharge of the matter confined in the abdomen, and a reunion or conſolidation of the parts ulcerated; and at the ſame time this diſcharge muſt be made very early after the breaking of the abſceſs, namely, before the matter has corrupted by ſtagnating, and infected the contiguous viſcera. We may be able by the ſigns already mentioned (§. 893.) to diſcern when a ſuppuration is formed; and from the ſudden relief of the ſymptoms (ſee §. 894.) we may learn that the abſceſs is broken; but as yet we are not certainly acquainted

whether the matter has made its way into the capacity of the breaſt, or that of the abdomen. It is certain that a pound or two of matter will not diſtend the abdomen ſo much as to ſhew in it any conſiderable tumor; and an abſceſs of this part, when it breaks, often contains much leſs matter than that quantity: therefore ſuch a purulent aſcites is not well known before the continual draining from ſuch an open ulcer has diſtended the full abdomen to a conſiderable bulk; and as this cannot be perceived till a conſiderable time after the breaking of the abſceſs, any attempts to evacuate the matter will then come too late. Add to this, that laudable matter has almoſt the thickneſs of cream, and will therefore not flow out by the paracenteſis or tapping of the abdomen; but will require a more ample paſſage to be made by a broader wound penetrating into the capacity of the abdomen; which wound itſelf will be more than a little dangerous. But again, how ſhall a broken vomica or abſceſs be healed, which is ſeated in the diaphragm, that is never at reſt? And how imminent is the danger, if the diaphragm, eaten through by the abſceſs, ſhall admit the air to paſs from the abdomen into the capacity of the breaſt? Hippocrates has therefore juſtly pronounced of a ſuppuration formed about the abdomen, "That "if indeed it points outward, and diſcharges the pu-"rulent matter, the patient may recover health; but "if ſuch ſuppurations break ſpontaneouſly inwardly, "they are fatal [b]." Aretæus [c] alſo informs us, that a ſuppuration of the diaphragm advances more haſtily, but is alſo more dangerous or fatal.

It was before obſerved, where we treated upon the various parts which might be the ſeat of a pleuriſy (§. 877.) that the inflammation might be in any part through the whole extent of the membranous pleura; and might therefore lodge, not in the ſides only, but in any other quarter of the breaſt. At the ſame time, we alſo promiſed to ſay ſomething more particularly concerning inflammation in the mediaſtinum and pericardium,

[b] De Morbis, lib. i. cap. 7. Charter. Tom. VII. p. 540. [c] Morbor. Diuturnor. lib. i. cap. 9. p. 35.

ricardium, when we ſhould come to treat profeſſedly on a Paraphrenitis under its proper head; for that the mediaſtinum and pericardium are parts covered by the membrane of the pleura. But in order to a right underſtanding of the maladies to which the mediaſtinum is liable from an inflammation, we ought firſt to conſider its origin and ſituation.

It is well known, that the whole internal ſurface of the thorax, in a dead ſubject, appears ſmoothly poliſhed, becauſe it is on all ſides lined equally by the membrane of the pleura: but where the pleura of each ſide has reached the column of the vertebræ in the back part of the thorax, it then departs from the ends of the ribs, and riſes up towards the forepart of the breaſt, even as far as the ſternum; whence, in treating upon fatal wounds of the thorax (§. 170, n° 4.) we remarked, that each ſide or cavity of the breaſt is ſurrounded with its diſtinct bag or membrane, in ſo much that the two pleuræ may be conſidered as two bladders, applied with their ſides one to the other, and growing together in the parts of contact; and it is the duplicature or doubled parts of theſe membranes, dividing the thorax into two cavities, that we call the mediaſtinum. But as the membranous pleuræ advance from the bodies of the vertebræ, by receding from each other, they leave a triangular ſpace, filled with the cellular ſubſtance, and completed behind by the column of the vertebræ; and thro' this ſpace are conducted the wind-pipe, gula or œſophagus, the thoracic duct, *&c.* But thence, forwards, the ſaid duplicated plates or lamellæ of the pleura cohere cloſe together, excepting a ſmall portion of their upper part where the gland called *thymus* is placed.

Now we are taught by practical obſervations, that this mediaſtinum is often inflamed in acute maladies of the breaſt; and Avenzoar[d] writes, that himſelf laboured under this malady: but as that author is not every where eaſily had, you may read what the learned Dr Friend[e] has extracted from him; or you may conſult

[d] Lib. i. theſir Tract. 16. cap. 6. [e] Hiſtory of phyſic, Vol. II. p. 80.

fult Zacutus Lufitanus[f], who has alſo given us the hiſtory of the preſent malady. But Avenzoar recovered from his diſtemper after a very copious bleeding from the arm, increaſed by the ligature or bandage coming off in the night from the vein which had been opened; and therefore there is reaſon to doubt whether this phyſician was not miſtaken in the diagnoſis of his own malady. Yet what he has written concerning an inflammation of the mediaſtinum, is very fairly confirmed by the obſervations of Peter Salius Diverſus[g], who ſeems never to have read this Arabian phyſician, and yet recounts almoſt the ſame ſymptoms as are read in the other; and afterwards ſaw, in the body of the deceaſed patient, that there had been an inflammation of this part. For he obſerved, that ſome who lay ill of an acute fever, with great reſtleſſneſs, and intenſe thirſt, perceived a ſevere burning heat about the heart and lungs, while the breathing continued very ſmall and quick: yet there was here no acute pain in the breaſt, but a ſuffocative oppreſſion rather than a pain was felt towards the ſternum: a cough here attended, which was dry in the beginning, but afterwards brought up a coloured ſpitting, commonly yellow: the pulſe in all theſe patients was like that of perſons afflicted with a pleuriſy, inſomuch that he would have thereby pronounced them really pleuritics, if the pain of the ſide had not been wanting. But, as he well obſerves, the mediaſtinum being inflamed is little painful, becauſe it is not ſo much ſtretched as the pleura in dilating the thorax by reſpiration. But when this inflammation has ſpread itſelf into the pericardium that lies near, it is uſual for faintings to join the malady, and for the pulſe to become wonderfully diſturbed. But he confeſſes, he gave a more diligent attention to all theſe circumſtances, becauſe, being then young, and completing his ſtudies under very eminent profeſſors, he had ſeen a man of quality labouring under a diſtemper, which had all the ſymptoms above enumerated, and

f De Medicorum principum Hiſtoria, lib. ii. Hiſt. 23. p. 223.
g De febre peſtilenti, et curationibus quorundam particularium morborum, &c. cap. 6. p. 247.

and who, beyond all expectations, expired on the ninth day of the malady, when every thing ſeemed to change for the better; but he was ſeveral times troubled with fainting fits before his death. But as the phyſicians were here doubtful of the malady, and his friends ſuſpected poiſon had been given him, they deſired an examination to be made into the cauſe of his death by inſpecting: which being done, an inflammatory ſwelling of conſiderable bulk was found in the mediaſtinum; and it alſo appeared, that an inflammation had in part ſeized upon the pericardium. Nor was there any other apparent cauſe of death found in the body.

It is probable inflammations of the mediaſtinum and pericardium happen oftener than is commonly believed: For indeed the cauſes which are obſerved ſo frequently to produce a pleuriſy, may very powerfully act upon theſe parts; namely, the cold air, or the drinking of large draughts of cold liquors by perſons much heated either by the weather, fire, or exerciſe, *&c.* (ſee §. 881.) But the pericardium is ſeated betwixt the lungs, by which it is almoſt every way ſurrounded; ſo that the cold air inſpired is by the dilated lungs applied to the contiguous mediaſtinum and pericardium; and the œſophagus, tranſmitting cold drinks, goes along betwixt the two receding plates of the mediaſtinum, and paſſes the diaphragm behind the pericardium. Now the principal ſigns of this malady are ſuch cauſes going before, and a great heat felt in the midſt of the thorax, while there is no pleuritic pain; to which add, a great diſturbance of the pulſe, and fainting fits, when the inflammation has ſpread to the pericardium. Frequently a malady of this kind may accompany a pleuriſy or a paraphrenitis, and occaſion a ſurpriſing train of the worſt of ſymptoms.

Here the prognoſis of the malady imports more danger than in a pleuriſy; more eſpecially if the pericardium be inflamed at the ſame time, becauſe of the nearneſs of the heart, and the very ſwift circulation of the humours through theſe parts; therefore the cure of a pleuriſy (§. 890.) muſt be here inſtituted without delay, that the inflammation may be removed by a *reſolution*:

tion: For all other ways of terminating an inflammation, either ſoon bring death, or elſe leave behind the moſt troubleſome or even incurable maladies. For if a ſuppuration here follows, the matter confined in the cellular ſubſtance that lies betwixt the plates of the mediaſtinum, may procure to itſelf wonderful paſſages, as it deſcends by its own weight betwixt the pleura, and the bodies of the vertebræ, where it may evidently form incurable ſinuſes and fiſtulæ. If a ſuppuration ſhall be formed in the pericardium, it may penetrate the cavity of that bag, and lie round the ſurface of the heart. Rondeletius [h], who has obſerved this malady, found in a man of quality "the heart ſur-" rounded with a ſerous humour, changed into a "corrupted matter." Columbus [i] found the heart every way ſurrounded by an abſceſs, by which it was almoſt conſumed.

But alſo the other ways of terminating an inflammation have been here obſerved. It was before ſhewn at (§. 897.), that frequently, after a violent pleuriſy, the lungs cohere or grow to the pleura, or elſe that the pleura has been callous or ſcirrhous. The ſame accidents may alſo happen to the pericardium inflamed, ſo that it may grow to the heart in every point; and then anatomiſts have judged the pericardium to be wholly abſent. Columbus [k] opened a ſtudent, who died in the univerſity of Rome, troubled with frequent fainting fits, in one of which he fell and expired. In this ſubject he believed there was no pericardium; but it ſeems much more probable that the pericardium was here grown into one with the heart itſelf. Ruyſch [l] kept by him the heart of a man who laboured under a continual fever, with an intolerable pain about the fore-part of his breaſt; but the outer ſurface of this heart was altogether rough or unequal, from the pericardium being grown to its ſurface. We ſee alſo that a true ſcirrhous induration of the pericardium has been obſerved by authors of the beſt repute. That very

[h] In libro de dignoſcendis morbis, cap. 10. [i] De Re Anatomica, lib. xv. p. 267. [k] Ibidem, p. 265. [l] Theſaur. Anatom. vi. n°. 36.

very learned phyſician Dr Friend [m] aſſures us, he ſaw the pericardium grown to above the thickneſs of a quarter of an inch throughout its whole extent; and ſo firmly cohering with the heart itſelf, that it could be no where ſeparated without laceration: but this pericardium was partly ſcirrhous, and partly filled with little abſceſſes.

It may be here a queſtion in a latent abſceſs under the ſternum, whether, after an inflammation of the mediaſtinum, a way may not be made for a diſcharge of its matter by an opening through the ſternum, leſt the pericardium and heart ſhould be corroded by the confined and putrid matter? Aretæus [n] mentions an empyema formed in the ſternum, and obſerves that it is a long time before it points outward: but to our misfortune the text of Aretæus is here mutilated or imperfect; and in his firſt book of the cure of chronical diſeaſes there is wanting, among other particulars, the the chapter in which he ought to treat on the cure of an empyema; and therefore we are obliged to continue ignorant of what he had to ſay upon the preſent ſubject. Galen [o] gives a remarkable caſe of a lad who received a blow upon his ſternum in the wreſtling place; and, being negligently treated, that part of the ſternum appeared afterwards corrupted by a ſphacelus. Galen truſting to anatomy, in which he was ſo well ſkilled, cut out the carious part of the ſternum; and tells us he was able to ſee the naked heart, whoſe pericardium was eaten through, under the carious part of the bone: yet this lad was cured in a ſhort time. At §. 895, we gave a remarkable caſe, in which the matter after a ſuppurated pleuriſy made its way thro' the ſternum; and therefore it is evident ſuch a method of cure is poſſible. And Dr Friend [p] informs us, that a very ſkilful ſurgeon often trepanned the ſternum, for abſceſſes that were ſeated in the mediaſtinum from the venereal diſeaſe, wherein he obſerved them to be frequent attendants.

But

[m] Hiſtory of Phyſic, part ii. p. 89.

[n] De Cauſis et Signis Morbor. Diuturnor. lib. i. cap. 9. p. 37, 39.

[o] Lib. vii. de Anatomica adminiſtratione, cap. 13. Charter. Tom. IV. p. 161.

[p] Hiſtory of Phyſic, part ii. p. 85.

But since the treatise of Peter Salius is rarely to be found, you may read the chapter of Schenkius [q] that contains the whole, *De inflammatione membranarum interseptientium et pericardii.*

Of an HEPATITIS, and of the several kinds of the JAUNDICE.

§. 914. EVEN the liver is also liable to an inflammation, in the like manner as we have seen in the several other viscera and parts hitherto considered: yet this malady is seldom suspected to be there; and perhaps, from the smallness of the hepatic artery, and the less impetus of the blood in the vena portarum, the liver may be not so often subject to inflammation as other parts.

From what has been said in our history of Inflammation at §. 373, 374, it appears evidently to be a malady that may take place in all the viscera of the body; and consequently that it may be seated also in the liver: but it has been customary to call this distemper *hepatitis*, for reasons you may see mentioned at §. 771. The ancient physicians called those patients *hepatical*, who were afflicted with an inflammation of this viscus. Thus Galen, in his definitions, says, *Hepatic patients are such as have a continual pain, hardness, and swelling of the liver, with an icteritious or discoloured body; such have an ardent fever, and a dry tongue* [r]. But it is to be observed, that Galen collected these definitions from the works of the physicians who lived before him, and who recorded those particulars in their writings [s]; and, therefore that these definitions do not always contain the direct sentiments of Galen

[q] Lib. ii. Observat. Medicin. p. 288.

[r] Hepatici sunt, quos jecor is dolor comitatur diuturnus cum tumore et duritie, et corporis decoloratione, supervenit illis febris ardens, et lingua exarescit. *Galen. Defin. Medic.* nº 274. *Charter. Tom. II. p.* 264.

[s] Ibidem, in proœmio, p. 232, 233.

Galen himſelf; as plainly appears from another paſſage of this great author [t], where he expreſsly ſays, that he does not by the term *hepatic* underſtand thoſe patients who had their liver inflamed, ſuppurated, or ſcirrhous; but that he particularly uſed this name for ſuch as had a weakneſs only of the functions proper to this viſcus, without any other manifeſt diſorder of it. But Celſus [u] aſſures us, that the diſeaſe of the liver, which the Greeks called (ηπατικον) *hepatic*, was as well chronic as acute. However, moſt phyſicians at preſent uſually underſtand the term *hepatitis* to comprehend the acute or inflammatory diſtempers of the liver; but thoſe who have any chronical diſorders of this viſcus, they have uſually termed *hepatic*, or *bad-livered*.

But ſince the arteries that go to the liver are but ſmall in proportion to the bulk of ſo conſiderable a viſcus, and the blood which is driven through the liver from the trunk of the vena portarum moves on but very ſlowly, as being now venous, and having no further aſſiſtance from the moving powers of the heart and arteries; on theſe accounts, probably, a true inflammation of the liver is not ſo frequent as in other parts: but very ſtubborn and chronical obſtructions are for theſe reaſons much oftener formed in this tender gland. Some eminent phyſicians, and among them Dr Frederick Hoffman [w], have even believed, "that "a phlegmon of the liver, if it be not amongſt the "things which exiſt only in fancy, is however to be "referred to the moſt rare or unfrequent diſeaſes." But notwithſtanding this, practical obſervations aſſure us, that purulent vomicas or abſceſſes of the liver are very often found upon opening of dead ſubjects, which prove that an inflammation muſt have been there before, ſince they came not from any tranſlation of matter lodged in other parts of the body.

§. 915. THE hepatitis, or phlegmon of the liver, is therefore ſeated in the final

[t] De compoſ. medicam. ſecund. locos, lib. viii. cap. vi. Charter. Tom. XIII. p. 585. [u] Lib. iv. cap. 8. p. 213. [w] Opuſc. Patholog. Pract. dec. 2. diſſert. viii. p. 484.

extremities of either of the ſaid veſſels (914.) which convey blood to the liver after the manner or with the ſame effects as arteries: and therefore this inflammation, like that of the lungs laſt conſidered, is twofold, in its ſeat, and origin; yet ſo that one may eaſily follow as a conſequence from the other.

Since, then, an inflammation can take place only in thoſe veſſels through which the humours are conveyed with a directed motion from the baſis towards the apex of the cone of the veſſel (ſee §. 119, and 371.); it is therefore evident this malady may be ſeated in the branches of the vena portarum diſperſed through the liver, as well as in the branches of the hepatic artery: for all the venous blood returning from the other viſcera of the abdomen, flows together into the trunk of the vena portarum; and from that venous trunk it is again propelled throughout the liver, by converging branches of the ſaid trunk: but anatomical injections have alſo taught us, that the branches of the hepatic artery, which convey blood for the nouriſhment of this viſcus, are diſtributed throughout every point of the liver, as well as the arterial branches of the porta, which ſerve for the ſecretion of the bile; and that they run in company, by the ſides of the former, throughout the whole ſubſtance of the liver; and even ſeem in many places to join, or open one into, the other by anaſtomoſes: for in a happy injection of the vena portarum, I have known the waxen matter return through the hepatic arteries; and therefore here, as well as in the lungs, a twofold inflammation may take place. But it deſerves to be remarked, that the effects of an inflammation in the liver from a ſtuffing up of the portal branches, or of the ends of the hepatic arteres, will be very different from the effects of an inflammation in the ends of the pulmonary and of the bronchial arteries of the lungs: for in both thoſe of the lungs, a very conſiderable force, from the heart, which is very near, urges upon the inflamed parts; but, in the liver, the branches from the porta are filled with the blood from

from the veins of the abdominal viſcera, moved on much more ſlowly than the blood of the hepatic arteries that go throughout the liver. On this account, the effects which ariſe from the blood urging upon an inflamed part (ſee §. 381, and 382,) and which are likewiſe the ſigns demonſtrative of a preſent inflammation do not ſo plainly ſhew themſelves when the malady lies in the branches of the vena portarum; and this ſeems to be the reaſon why ſome phyſicians are often miſtaken in their diagnoſis of this diſtemper.

Galen [x], and many phyſicians after him, have ſuppoſed a conſiderable difference of the diſtemper according to the certain part or region of the liver that the inflammation occupies; as whether it be in the convexity or gibbous part, that lies next the diaphragm; or in its hollow part, that covers a portion of the ſtomach and duodenum. But more eſpecially he will have the diagnoſtic ſigns to be different in theſe two caſes, becauſe different parts are preſſed and irritated by the inflammatory ſwelling of the liver: ſo that if the phlegmon be ſeated in the convex part of the liver, he obſerves there will be a greater difficulty of the reſpiration, a pain of the right ſide reaching up to the neck, and a cough; but if the concave part of the liver be inflamed, he then tells us a ſickneſs, or reachings, vomiting, and great thirſt, will be more obſervable. Moreover, he makes a difference in the critical termination of an hepatitis, according to this diverſity of the parts affected in the liver; for in another place he ſays, *The gibbous parts of the liver being inflamed, obſerve commonly three kinds of criſis or ſalutary termination; namely, by hæmorrhages from the right ſide of the noſe, by relieving ſweats, and by copious urines; but that the hollow parts of the liver are relieved by bilious ſtools and ſweats, and ſometimes alſo by vomitings* [y]. But it ſeems probable that the ancients ſuppoſed the gibbous

[x] De Locis Affectis, lib. v. cap. 7. Charter. Tom. VII. p. 495.

[y] Hepatis gibbæ partes inflammatæ tribus præcipue criſis modis obediunt: hæmorrhagiis ex dextra nare, atque ſudoribus utilibus, et urinis copioſis. Simæ autem partes excrementis alvi biliioſis, atque ſudoribus, nonnunquam etiam et vomitibus. *De Criſibus, lib.* iii. *cap.* 3. *Charter. Tom. VIII. p.* 430.

part of the liver to be inflamed when the malady reſided in the extremities of the hepatic arteries; and to be in its hollow part, when the extremities of the vena portarum were in like manner affected. For ſince the liver takes ſome of its arteries from the diaphragm, and from the ſuſpenſory ligament by which it is tied to the diaphragm; the circumjacent parts are often inflamed, ſo as to cauſe, by the motion of the diaphragm, a pain in breathing, which is by Galen laid down as the principal diagnoſtic ſign of an inflammation in the gibbous part of the liver. On the other hand, he accounts a ſickneſs or averſion to food, with great thirſt, or a vomiting, to be the principal ſigns of an inflammation in the hollow part of the liver; all which ſymptoms are eaſily underſtood from the diſturbed action of the chylificative viſcera, occaſioned by the impeded courſe of the blood through the extremities of the vena portarum. Nor does Galen in this laſt caſe mention any thing of remarkable pain. When we treated of Anguiſh as a ſymptom of fevers, (ſee §. 631, *et ſeq.*) we remarked, that an obſtruction, or arreſtment, of the blood, in the extremities of the vena portarum, occaſions rather a great oppreſſion than any ſharp pain. But, on the contrary, practical obſervations ſeem to teach us, that there is a great ſenſe of a burning heat, and a ſevere pain, when the ends of the hepatic arteries are inflamed. Thus the celebrated Bianchi[z] obſerved ſuch an epidemical malady in the military hoſpitals, during very dry and ſcorching ſummer-heats. Theſe patients being immediately ſeized with a very acute fever, perceived a moſt ſevere burning in their right hypochondrium; their urine was flame-coloured; and ſcarce any ſwelling, or even tightneſs, was perceptible about the liver; but in ſome an eryſipelatous redneſs of the ſkin, often of a deep colour, occupied the whole right hypochondrium. Thoſe who recovered of this diſtemper, had an abatement of the ſymptoms on the third day; and on the fourth they vaniſhed, without any apparent criſis: but thoſe who periſhed by it, having no abatement either of the fever,

[z] Hiſtor. Hepat. part. 3. Tom. I. p. 426.

fever, or of the ſymptoms, became ſuddenly delirious, and expired on the fourth or fifth day: but he obſerves the pain here was not a heavy one, as from the ſtretching a part; but a very ſharp, piercing, or bruiſing pain. Hippocrates [a] has alſo deſcribed an hepatitis like this ariſing in the ſummer-time from drunkenneſs and the eating of beef; in which "he obſerved the pains to "invade very ſharply, and to continually increaſe "without leaving the patient free one hour." But that the inflammation which came under the obſervation of the celebrated Bianchi, was eryſipelatous, he concludes, partly from the redneſs of the right hypochondrium; and in part from obſerving ſuch a diſtemper in a woman [b], who was threatened with death on the third day, but an ardent eryſipelas breaking ſuddenly out upon her whole face upon the fourth day, the fever and other complaints about the liver went off without any other evacuation. However, the ſlow motion of the blood through the branches from the vena portarum does not ſeem apt to excite ſuch violent heats.

If it be inquired, whether, in ſuch an acute hepatitis, the malady may not be eaſily ſpread to the adjacent diaphragm, ſo as to produce hickups? we anſwer, that it ſeems very probable. Hippocrates informs us, "That an hickup comes upon an inflammation "of the liver [c];" and in another place he pronounces, "That an hickuping in an inflammation of the li"ver is a bad ſign [d]." And Celſus [e] likewiſe accounts this a ſign of an acute malady in the liver.

§. 916. BOTH the arterial and the portal inflammation of the liver (§. 915.) have the like cauſes which precede them, namely, the general cauſes (§. 375, to 380.) that produce inflammations of any other kind, more particularly determined towards theſe parts. To

[a] De Internis Affectionibus, cap. 30. Charter. Tom. VII. p. 660.
[b] Hiſt. Hepat. part. 3. Tom. I. p. 434. [c] Aphor. 58. ſect. v. Charter. Tom. IX. p. 230. [d] Aphor. 17. ſect. vii. ibid. p. 300.
[e] Lib. iv. cap. 8. p. 213.

which add ſome (out of a great number that might be reckoned up), which have a more peculiar tendency and influence upon the hepatic ſyſtem: ſuch as, An exorbitant fatneſs of the omentum; an atrabiliary or groſs blood; a bilious conſtitution; acrimony from any humour or matter, purulent, ichorous, or ſcorbutic, ſtagnating in any part; more eſpecially when theſe are diſſolved, moved, and directed toward the liver by external heat, a fever, exerciſe, aliments, medicines, or poiſons: to theſe join, A greaſy, acrid, and aduſt ſtate of the bile itſelf, put into motion by its particular cauſes; a ſtone or a chalky matter, a ſcirrhus, callus, ſteatoma, abſceſs, cancer, or a worm, blocking up any part of the liver, gall-bladder, or biliary ducts, ſtraitening or compreſſing them by the addition of any other aſſiſting cauſe here following; ſuch as, ſudden and intenſe coldneſs introduced or applied, from the air, drinks, bathing, or ſwimming, after the liver or abdomen have been much heated; thirſt long endured under great exerciſe, with ſweats, and in the heats of ſummer; an ardent fever, continued under faſting, or without drinks; great paſſions or diſturbances of the mind; violent commotions excited by vomitives; hypochondriacal affections of long ſtanding.

Concerning the general cauſes of inflammation, we have already treated under the numbers cited; from whence it is ſufficiently apparent, thoſe cauſes may alſo take place in the liver. But there are ſtill ſome cauſes remaining to be examined, which are more peculiar to the organ we now conſider.

An exorbitant fatneſs of the omentum.] The omentum, which in abortives and new-born infants exceeds in thinneſs the thinneſt ſarſinet or ſilk, while it includes no fat in its folds or plaits, which has alſo the

ſame

ſame very fine texture in adult but lean perſons, is nevertheleſs able to grow to an immenſe bulk with fat in thoſe who are inclined to be corpulent; for the greater part of the bulk of the protuberant belly in ſuch perſons proceeds from the fat of the omentum. We ſee, that, in fatted oxen, ſometimes the cawl amounts to near an hundred weight; which yet leaves only a few ounces of thin ſkins, when all the fat is melted and preſſed out from it. But ſuch a bulk of omentum may be very prejudicial by compreſſing all the adjacent viſcera; and the danger will be ſtill greater, when the maſs of ſtagnant fat here collected becomes liquefied by a fever or by great exerciſe, ſo as to be returned from the cells of the omentum into the circulation.

For that violent exerciſe of body, and acute febrile diſeaſes, put the ſtagnant fat into motion, and diſcharge it from the body, we are taught by the moſt undoubted and daily obſervations. But the omentum has no excretory veſſel, and therefore all the fat, liquefied and transfuſed by diſeaſe or great exerciſe, muſt paſs directly through the epiploic veins into the vena portarum, whereby the whole ſecretory fabric of the liver will be ſuddenly over-charged with an inundation of oily fat, which, being extremely ſluggiſh and difficult of paſſage through the final ſtraits of the leaſt veſſels, may give birth to an arreſtment or obſtruction of the worſt conſequence; more eſpecially in this inert viſcus, which firſt receives the effects of the ſaid oily plethora. See what was ſaid of this matter at §. 693, where we treated of relieving the febrile heat by leſſening the maſs of the juices to be moved.

An atrabiliary or groſs blood, with a bilious conſtitution.] Such a ſtate of the juices, which we ſhall hereafter conſider more at large in a chapter on Melancholy, is ſaid to be preſent, when, the moſt moveable parts having been diſſipated from the whole maſs of blood, the remaining more denſe or earthy parts, uniting more intimately with the thick and oily parts, give the blood a kind of reſinous or pitch-like tenacity, by which it becomes ſtrongly inclined to adhere and clog within

within the ſtraits of the veſſels. We ſhall alſo hereafter ſhew (at §. 1098.) that the veſſels of the hypochondriacal viſcera, and ſuch as concur to the buſineſs of chyliſication, are more eſpecially infeſted and diſturbed by this atrabiliary matter. But all the blood from thoſe viſcera returns into the vena portarum, and muſt by that paſs through the liver; and therefore, if the atrabiliary viſcid matter, arreſted in the veſſels of the chylopoietic viſcera, becomes reſolved and put in motion, the matter will be firſt catched in by, and its pernicious effects exerted upon, the liver. Such a cauſe of an hepatitis is pointed out by Hippocrates, where he ſays, *This malady ariſes from atra-bilis, when that flows to the liver*[f]. And he informs us, that ſometimes this diſeaſe is ſo miſchievous as to kill ſuddenly; namely, when the atrabiliary tenacity has acquired alſo a conſiderable degree of corroding acrimony, by which it ſoon deſtroys all before it.

Acrimony from any humour or matter, purulent, *&c.*] Where we treated on a Peripneumony, it was remarked, that it is ſometimes cured by a critical depoſition of purulent matter upon other parts of the body; and that the ſaid matter has a two-fold tendency, either to the upper or to the lower parts of the body. But when it tends to the lower parts, in that caſe Hippocrates obſerves (ſee §. 839.) that the ſigns of a ſlight inflammation appear in the hypochondrium, while this acrid matter meets a more difficult paſſage through the ſtraits of the vena portarum. But moreover, this matter being purulent, and collected to a conſiderable quantity, afterwards cauſes a vomica or abſceſs of the liver, (ſee §. 841.) There are alſo many other obſervations, teaching, that the matter which flows from the wounds left after amputating a breaſt or the operation for a large aneuriſm, *&c.* has been ſo abundant, that the patient would have been thereby waſted as in a conſumption, if the dreſſings were often renewed by the ſurgeon; but, on the other hand, when the collected mattter has been too long retained upon the ſurface of ſuch

[f] Hic morbus oritur ab atra bile, quando ad hepar confluxerit. *De Internis Affectionibus, cap.* 29. *Charter. Tom. VII. p.* 659.

ſuch wounds, being abſorbed and depoſited upon the liver, it has therein formed purulent abſceſſes. Hollerius [g] tells us, that he twice or thrice obſerved intolerable pains of the calves of the legs in a fever, which pains would receive no eaſe by any remedies: but after death, upon opening the legs with a ſcalpel, there was found a ſmooth or uniform and white matter equally diffuſed through the cellular membrane; and the liver was alſo found to contain purulent vomicas or abſceſſes. He indeed believed, that this matter was, inſtead of blood, conveyed from the liver to the calves of the legs; becauſe, agreeable to the opinion of that day, he judged the liver to be the principal organ of ſanguification: but the hiſtory of the diſtemper plainly ſhews, that the matter being formed in the legs was abſorbed, and tranſlated thence to the liver. In Schenck [h] you have this and ſeveral other obſervations of the like kind. From the ſame cauſes, it is evident, an ichorous or ſerous matter may be depoſited in the liver, as the effect commonly of a putrid or degenerated matter. Moreover, in the ſcurvy, in which diſtemper the blood ſo far degenerates as to become offenſively thick and acrid at the ſame time (ſee §. 1153.) the liver has been alſo found frequently ulcerated or corroded [i].

But the cauſes before alleged are more eſpecially miſchievous when the motion of the blood and juices becomes ſuddenly increaſed, either by ſultry heat of the air, violent exerciſe of body, or by a fever; whence a greater diſpoſition to putrefaction is known to follow. The ſame is alſo true if the circulation of the humours be ſuddenly increaſed either by aliments or medicines; ſee §. 99. For this reaſon Hippocrates [k] aſſures us, that an hepatitis ariſes from atra-bilis collected in the liver, chiefly in the autumn, or at the changes of the ſeaſons of the year; about which times fevers are uſually epidemical and ſpreading. And a little after he ſays [l], That another kind of hepatitis

[g] Holler. in Coac. Hippoc. p. 348. [h] Lib. iii. p. 411. [i] Academ. des Sciences, l'an 1699. Mem. p. 240, &c. [k] De Internis Affectionibus. cap. 29. Charter. Tom. VII. p. 659. [l] Ibid. cap. 30. p. 660.

patitis ariſes from bile, chiefly in the ſummer-time, after drunkenneſs and devouring of beef.

Poiſon, *&c.*] There are many poiſons which ſuddenly fuſe or diſſolve the humours, and alſo move them very violently. Such are the ſtrongeſt metalline preparations; as for example, the corroſive ſublimate of mercury, the cryſtals of ſilver, *&c.* Theſe may ſuddenly diſſolve the atrabiliary matter collected in the veſſels of the abdominal viſcera, and drive the ſame into the narroweſt veſſels of the liver, ſo as to produce an hepatitis. But there are ſtill others whoſe manner of acting we do not ſo well underſtand, although they ſuddenly diſturb the functions of the liver. Thus Galen [m] obſerved a ſervant to the emperor, who uſed to catch vipers, by a bite from that animal had his whole body changed to the green colour of leeks. Lanzoni [n] obſerved a perſon bit in the right-hand by a domeſtic cat, from whence the hand was invaded with great pain and ſwelling; but when thoſe went off, a yellow-jaundice enſued that laſted forty days: and a like obſtinate jaundice he obſerved in a perſon who had been bit in the leg by a dog. The moſt certain obſervations teach us, that ſome poiſons, by a wonderful property, not intelligible from any ſtructure of bodies hitherto known, affect only ſome particular parts of the human ſyſtem: as for example, the roots of henbane, eaten, diſturb the functions of the brain; cantharides, taken inwardly, thoſe of the urinary paſſages, *&c.*; and perhaps, from the venomous bites of certain animals, ſuch a virus enters the body as diſturbs the functions of the liver rather than thoſe of other parts.

A bile that is fat, acrid, aduſt, *&c.*] The bile being the moſt acrid of any humour that inhabits the body; when it inclines to putrefaction, it may kindle the moſt acute fevers, as we declared before at §. 586, where we treated on the cauſes of fevers: But this is more eſpecially true of the cyſtic bile, which is retarded in its diſcharge, and apt to be accumulated, both

[m] De Locis Affectis, lib. v. cap. 8. Charter. Tom. VII. p. 498.
[n] Novis Actis Phyſ. Med. obſ. 96. Tom. I. p. 174.

both from the natural ſituation of the gall-bladder, and from the narrowneſs and crooked courſe of its duct. But whenever this bile, rendered more acrimonious by ſtanding, inclines to a putrefaction by a ſultry hot air or violent motion of body, it may then do great miſchief to the contiguous liver, with which near half of the gall-bladder coheres; for we ſee, in dead bodies, that the corrupted bile filters or tranſudes, as it were, through its bladder, ſo as to tinge all the circumjacent parts with its own yellow colour. But this bile has ſtill a more eaſy paſſage into the liver, ſince we are ſhewn by anatomical experiments[o], that the cavity of the gall-bladder communicates by an open and free courſe or duct that goes into the body of the liver itſelf. From hence frequently in the autumn, after very ſultry heats, bilious fevers ariſe, that are often accompanied with an hepatitis or inflammation of the liver.

But ſince every thing is juſtly ranked among the cauſes of inflammation (§. 375.) which by ſome compreſſure may be able to diminiſh or occlude the extremities of the veſſels, and hinder the free courſe of the humours through them, therefore a conſideration of thoſe cauſes well deſerve our attention, ſince the truth of their exiſtence is often ſhewn to us by the opening of bodies deceaſed.

A ſtone.] That ſtony concretions are found almoſt in all parts of the body, will be ſhewn hereafter in a particular chapter upon the ſtone; but in the mean time it is certain, that thoſe concretions are no where oftener found than in the liver and gall-bladder, and in the paſſages which are deſtined to the ſeparation, retention, and expulſion of the urine. The obſervations that teach us this truth are numberleſs, and therefore we ſhall only recount a few of the beſt credit. Columbus[p] aſſures us he has found ſtones in the liver; and that in the body of St Ignatius he found ſtones in the vena portarum. But in the gall-bladder and large biliary ducts (*pori biliarii*) they very frequently occur: and Ruyſch[q] teſtifies, that ſometimes they are even met with in the ſubſtance of the liver itſelf, but

[o] Herm. Boerhaave Inſtitut. ſect. 348.
[p] Lib. xv. p. 266.
[q] Obſerv. Anatom. obſ. 24. p. 25.

but rarely; for though he had above an hundred times excarnated the vascular compages of the liver, he only once found a hard stone hid in its parenchyma, weighing two scruples, and without any attachment to the biliary pore or duct.

A chalky matter.] Sometimes there are concretions of the like sort found in this organ, but of a more friable texture, and of a whiter appearance, like gypsum or plaster of Paris. Such incrustations were often observed by Glisson [r] in the pori biliarii and its larger branches dispersed through the livers of oxen that had been fed in stalls with hay and straw during the winter-season, and without exercise. But then these concretions are very friable; and they afterwards dissolve again, and pass out of the body, when the cattle come to feed upon the fresh grass of the meadows; for in the oxen that are slain in the spring and summer, they are very rarely to be found. But we also read of the like chalky matter found in the human liver [s].

A scirrhus or callus.] I have myself frequently seen in the bodies of persons who have languished under diseases, and the same may be read in the *Acta Eruditorum Physico-medica*, that the whole liver has appeared covered with a very strong and thick coat, which made a noise in the cutting of it almost like leather or parchment; and the whole remaining flesh of the liver was very tough and resisting, in part whitish, and in part grey or ash-coloured.

A steatoma.] What a steatoma properly is, was declared before at §. 112, n° 1. A tumour of this kind was observed by Columbus [t]. And Glisson [u] relates, that in the body of a man who had for many years been troubled with strumous swellings in the neck, the liver was found both inwardly and outwardly full of numberless glandules or knots, of the size of peas and beans: upon being cut through the middle, these knots discharged no humour, but seemed to be made up of jelly and plaster or mortar; and by these the bulk of the liver was not only enlarged, but also it had double the

[r] Oper. Tom. II. Anat. Hepat. cap. 7. p. 104. Ruysch. Observ. Anat. obs. 17. p. 23. [s] Nova Acta Phys. Med. Tom. II. obs. 178. p. 417.
[t] Lib. xv. p. 265. [u] Oper. Tom. II. Anat. Hepat. cap. 8. p. 113.

the uſual weight. But he even [w] ſaw a ſteatoma or tumour of this kind that was ſtill much larger, weighing near ſix ounces, and fixed in the gibbous part of the liver towards the back part of the diaphragm.

Apoſtem or abſceſs.] Although the term *apoſtem* or abſceſs is commonly underſtood to mean the change of an inflammation to a ſuppuration, or the collection of matter that thence follows in any part of the body; yet it is ſometimes uſed in a ſenſe ſtill more general: for thus Galen [x], in a paſſage we before cited from him (ſee §. 402.) calls in general thoſe diſorders, in which parts that were before contiguous recede from each other ſo as to leave an intermediate ſpace that may hold humours or matters of divers kinds. But when a purulent abſceſs is formed in this viſcus after a previous inflammation, then ſuch an apoſtem is the effect, and not the cauſe of an hepatitis; but yet, by compreſſing the adjacent parts, it may produce a new inflammation. But medical obſervations teach us, that there are ſometimes wonderful apoſtems found in the liver in which was no pus or matter, but a very different ſubſtance. Such a bag-full of a gelatinous matter, to the weight of ſeveral pounds, was found in the gibbous part of the liver of a deceaſed perſon that Bianchi [y] opened; and this great ſwelling had at laſt tore open the diaphragm, and poured out a great quantity of its collected matter into the right capacity of the thorax, which finally ſuffocated the miſerable patient. He likewiſe obſerved, in a girl who expired of a lingering fever, that the whole ſubſtance of the liver contained a great number of a leſſer ſort of ſwellings, which conſiſted of a matter like the white of an egg hardened by the fire [z]. In the body of a man ſuffocated by the fumes of coals, no other fault appeared in the viſcera but a large globular ſwelling at the bottom of the gall-bladder, one hemiſphere of which grew into the ſubſtance of the liver. The tumour itſelf, fixed to a ſteel-yard,

[w] Ibid. p. 114. [x] Method. Medend. ad Glauc. lib. ii. cap. 9. Charter. Tom. X. p. 382. [y] Hiſt. Hepat. part. 2. cap. 5. Tom. II. p. 154. [z] Ibid.

was found to weigh above a pound, and was outwardly covered with a very thick ſkin: but within the cavity of this tumour were contained above nine thouſand little compreſſed bladders, like thoſe of white grapes as to colour and figure, but of divers magnitudes; and, what was here the moſt wonderful, they neither cohered to each other, nor to the bag in which they were all included [a]. The celebrated Littre [b] found in the larger lobe of the liver, an ample cavity that contained bodies of an oval figure full of a viſcid liquor, and as pellucid as water.

A cancer.] Namely, one from a ſcirrhus preceding: which in this caſe offends not only by its bulk and preſſure, like a ſcirrhus, upon the circumjacent parts; but alſo corrodes every thing with its moſt ſharp, acrimonius ichor; of which ſee more at §. 492, *& ſeq.*

A worm.] We ſhall hereafter be more particular upon this head, when, in treating upon the diſeaſes of infants, we come to conſider worms that are found within the human body, and which are the moſt frequently obſerved in thoſe of tender years. It will there appear, that almoſt all parts of the body have been found the ſeat of worms; but more eſpecially the ſtomach and inteſtines. It may ſuffice for us in this place to take notice, that the practical obſervations of phyſicians ſhew, that in the liver [c] likewiſe worms have been found. Ruyſch, diſſecting a mouſe, found, in the hollow ſide of the liver, a little pendulous bladder, upon opening which he drew out a very ſlender worm of above a ſpan in length. But in the livers of oxen, calves, and ſheep, he often found the ducts of the liver that convey the bile, ſtuffed with a kind of tartareous matter, impeding the courſe of the bile to the inteſtines, whereby the biliary pores or ducts appeared much diſtended or enlarged; and, under theſe circumſtances, he often found in them a ſort of lively little worms [ſhaped like flounders, and commonly called *flooks*] about the ſize

[a] Academ. Scient. Petropolit. Tom. I. p. 379. [b] Academ. des Sciences, l'an 1704. Hiſt. p. 38. [c] Obſer. Anat. obſ. 9. p. 17.

ſize and figure of thoſe which from their reſemblance to gourd-ſeeds are called *cucurbitini*[d]. But Nebelius[e] found in the body of a military perſon, a long worm both in the cyſtic and in the hepatic duct, with a number of the ſame ſort in the inteſtines; whence he reaſonably conjectured, that thoſe two worms had made their way from the duodenum, through the common biliary duct, into the cyſtic and the hepatic duct. Perhaps there may be alſo other paſſages by which worms may get into the liver. For Ruyſch[f], in examining the meſentery of an horſe, found a part of the meſenterical artery very much dilated; and upon opening it he ſaw numberleſs ſmall worms, about the ſize of very fine needles. But it may be not abſurd to believe, that ſuch vermiculi, when they had a much ſmaller bulk, might paſs along from the meſenterical arteries to the veins of the ſame name, and go by them into the liver.

But all theſe above ſpecified cauſes, calculi, plaſter, or tartar, *&c.* found in the liver, by compreſſing the contiguous parts may hinder and diſturb the free courſe of the blood through the vena portarum and liver, and even put a ſtop to the free expulſion of the bile that is already ſeparated. But an obſtruction being thus formed, if there now follows a cauſe exciting a greater motion of the circulation, an inflammation will here enſue (ſee §. 371.) or an hepatitis will be thus produced. In the next place it is our buſineſs to conſider the principal cauſes by which the blood, to be moved through the vena portarum, becomes indiſpoſed to paſs freely in the ultimate ſmall extremities of that veſſel within the liver.

A ſudden and intenſe coldneſs introduced or applied by the air, drinks, *&c.*] When we treated upon Obſtruction, it was ſhewn (ſee §. 117.) that cold ſo clots or conjoins the particles of the blood one to another, as to render them unfit to paſs freely through the final extremities of the veſſels; and it alſo appeared at §. 118. that the greateſt danger of a future and

d Ibid. p. 23. obſ. 18. e Nov. Acta Phyſico. Med. Tom. V. obſ. 112. p. 392. f Obſer. Anat. obſ. 6. p. 16.

ſudden obſtruction from this cauſe, is when ſuch a great and ſudden coldneſs comes upon the body of a perſon whoſe veſſels and juices have been before much rarefied and dilated by heat. If now we conſider, that a great portion of the liver lies incumbent on the ſtomach, the greatneſs of the danger will readily appear, to which thoſe imprudent perſons expoſe themſelves, who, after being heated with exerciſe, fill their ſtomach ſuddenly with large draughts of cold liquors, but more eſpecially when they drink ſuch as have a greater coldneſs given to them by ice. The like danger is alſo threatened from bathing or ſwimming in cold water, after the body has been heated to a ſweat by labour or exerciſe. It is well known from anatomy, that the fore-part of the liver which covers over the ſtomach, lies nakedly contiguous to the peritonæum, and may be therefore in that place very eaſily affected by external cold. I have myſelf ſometimes ſeen both an inflammation of the liver, and a very ſtubborn jaundice, from this cauſe. See what was ſaid upon the like cauſes in a pleuriſy at §. 881. From hence Aretæus [g] appears to have very juſtly ranked ſudden cooling of the body among the cauſes of an hepatitis.

Thirſt long endured, *&c.*] For thus the moſt liquid parts of our humours are evaporated or carried off by the air, while there are no recruits made of the diluent vehicle to the blood, whoſe particles therefore unite or grow more coheſive one to the other, ſo as to be unable to paſs freely through the final extremities of the converging veſſels (ſee §. 117.) But from this cauſe the worſt maladies may ariſe in all parts of the body, but more eſpecially in the liver; in which the blood is obliged to flow from the veins, through arterial ſtraits, without having received any freſh force from the heart and lungs. If now, from the whole tract of the ſtomach and inteſtines, over-dried for want of drink, there be none of the uſual moiſture abſorbed into the meſeraical ſmall veins, the venous blood of the abdominal viſcera will turn too thick before

[g] De Cauſis et Signis Morbor. Acutor. lib. ii. cap. 7. p. 19.

before it is driven by the vena portarum through the liver, in the final ſtraits of whoſe leaſt veſſels it will be therefore apt to heſitate. But the other venous blood, before it enters the right ſide of the heart, is firſt diluted with all the lymph collected throughout the cellular fabric of the whole body, and is then attenuated by paſſing the pulmonary artery with a very conſiderable muſcular force from the heart. But as both thoſe helps are wanting towards promoting the courſe of the blood through the liver, it readily appears, that we have much reaſon to fear obſtructions in this gland, from an impervious heſitation in its ſtuffed-up veſſels.

An ardent fever, *&c.*] How great a dryneſs ariſes throughout the whole body, in perſons who lie ill of ardent fevers, was ſhewn before at §. 738. *et ſeq.* But then in thoſe fevers there is uſually great thirſt; for all the cauſes of thirſt (§. 636.) are preſent to a very great degree in this fever. It was before remarked (at §. 739.) that ſometimes, when all the functions of the brain are diſturbed in this fever, the ſenſe of thirſt ſhall of a ſudden be effaced, although the cauſes which excited it ſtill remain, or are even continually increaſing. It was alſo formerly a cuſtom to treat the patients, in theſe moſt ardent maladies, with hot medicines, and little or no allowance of drinks: but from thence, one may plainly perceive, how eaſily an hepatitis or inflammation of the liver might enſue, after the manner above ſpecified. The wiſe ancients learned, by a diligent attention to diſeaſes, that the liver became often affected from theſe cauſes, in the worſt maladies: and they uſually inquired into the conditions of the hypochondria in ſuch caſes, more eſpecially that of the right ſide, to know if there was any pain, ſwelling, or the like; and from thence they drew very handſome preſages concerning the various events and endings of the maladies, either into health, death, or other diſeaſes. Conſult what has been ſaid upon a tightneſs of the hypochondrium in a continual putrid fever, in the commentaries to §. 735.

Great paſſions or diſturbances of the mind.] Con-

cerning the wonderful effects of violent disturbances in the mind, we treated at §. 104.; and it there appeared, that all and every single function of the body might be disturbed after a surprising manner, only by a change of the thoughts or ideas. But violent effects of this kind more especially follow from sudden fear or great grief. For we see, that, in these violent affections of the mind, all the vessels of the body are very suddenly cramped or constringed; upon which a sense of anguish or oppression and weight is directly perceived about the heart and breast, from the hindrance that then follows to the free course of the blood and humours through the vessels: and that polypous concretions of the blood, inflammations, or sudden putrefactions, are thence to be feared, was shewn before at §. 632. Moreover, it will hereafter be made to appear (§. 1093.) that violent commotions of the mind produce an atrabiliary temperature of the humours, which was lately in the present aphorism reckoned amongst the causes of an hepatitis. Hippocrates [h] has also remarked the like cause of an hepatitis, when he tells us, it most frequently happens *in peregrinatione per deserta loca, et ubi terror ex viso spectro corripuerit;* "in travelling through desert "countries, or when a fright seizes upon a person "from having seen a spectre or ghost."

Violent commotions excited by vomitives.] When we treated upon a Febrile Vomiting (§. 652.) it was declared, that this vomiting happens when the diaphragm is suddenly and strongly contracted downwards, while at the same time the muscles of the abdomen also contract and compress all the contents of that venter, by which means the stomach is in a manner powerfully urged as if betwixt the sides of a press. While this happens, the motion of the venous blood, in the abdominal viscera, is consequently accelerated; and will therefore pass with a greater impetus through the vena portarum into the liver. If now the vessels in the liver are pervious, and the blood passable, we have no great damage to expect from this accelerated motion;

[h] De Affectionibus, cap. 1. Charter. Tom. VII. p. 674.

motion; but if a groſs atrabiliary matter be by the ſhocks of vomiting urged ſuddenly upon the liver, or that tender viſcus itſelf be previouſly weakened by ſome chronical diſeaſes, we have then often great evils to apprehend from ſuch a quick motion of the blood through the vena portarum. Under theſe circumſtances, a fatal hypercatharſis, or over-purging, has been often obſerved, after the uſe of vomitives; and ſometimes diſcharges of blood have enſued both upward and downward, as we intimated before upon another occaſion, at §. 656.

Hypochondriacal maladies of long ſtanding.] When the more fluxile parts of our humours have from any cauſe been exhauſted from the whole maſs of the blood, the more groſs and leſs fluxile parts cohere cloſer to each other, and produce that ill ſtate of the blood which we call *atrabiliary*: but when this groſs atrabiliary matter is collected in the abdominal viſcera, while the ſame cauſes ſtill continue to operate which firſt induced the cacochymia; the diſtemper is in that caſe termed the *hyp*, or hypochondriac malady (ſee §. 1098.): therefore what has been before advanced under the preſent aphoriſm will eaſily ſhew the reaſon why an inveterate malady of this kind may be the cauſe of an hepatitis; namely, whenever another cauſe ſhall accede to diſſolve this atrabiliary matter, and move it into the liver.

But there is ſtill another kind of this hypochondriacal malady obſerved by phyſicians, and called by a reſembling name, although it be quite of a different nature: for a great many women, and even ſome men, who lead an unactive life, and look pale with much ſtudy and reading of books, have their whole nervous ſyſtem ſo very moveable or irritable, that even from ſlight paſſions of the mind they are troubled with great oppreſſions, convulſive motions, pains, and the like; ſee the comment to §. 633. Such men have been uſually termed *hypochondriacal*, as the women have been denominated *hyſterical*, from the ſame malady; which in them has been wrongly aſcribed to the womb, becauſe they are often worſt afflicted with it at the times

of their menſtruation and going with child. But when this malady ariſes only from too great a tenderneſs or irritability of the nerves, cauſing inordinate diſtributions of the ſpirits, it is then uſually termed by phyſicians the *hypochondriacal malady without an offending matter;* becauſe when the hyſterical fits or tumults are once quelled by ſuitable remedies, there are no ſigns left of the malady as affecting any particular organ. But Sydenham, who is the beſt writer upon this diſtemper, informs us, that no ſign more ſurely diſcovers and points out this malady, from the many other diſtempers to which its numerous ſymptoms have a reſemblance, than the very copious flux of moſt thin and limpid or watery urine: therefore, when ſuch an hyſterical diabetes has continued ſome time, exhauſting the thinner parts of the humours, it may at length produce that kind of the hypochondriacal malady which is deſervedly aſcribed to an atrabiliary thickneſs of the blood.

§. 917. WHEN an inflammation of the liver has once ariſen from theſe multifarious cauſes (§. 916), it will have various effects according to the different ſtate or antecedent diſpoſition of the liver itſelf, the diverſity of the inflammatory matter that is moved to it, and the diverſity of the moving cauſe which excites the ſaid matter.

That we may be able, by the rules of art, to determine in this malady what good events we may hope for, and what evils we may fear; a regard muſt be had principally to the following particulars.

According to the different diſpoſitions of the liver, *&c.*] For if the liver was before ſcirrhous, or ſtuffed with ſtony concretions, one may eaſily underſtand that the hepatitis will be more difficult to cure, than if there had been no ſuch diſorder pre-exiſting; but we foreſee conſequences ſtill worſe, if the ſubſtance of the liver has been already corrupted by a malignant or cancerous ulcer.

Ac-

According to the diverſity of the matter, *&c.*] For example, the fat of the omentum being ſuddenly diſſolved, and moved to the liver, may cauſe the worſt inflammations; but if an atrabiliary matter, which has already aſſumed a ſtate of acrimony, be driven to the liver, ſo as to prove the cauſe of an hepatitis, there muſt be evidently no hopes left.

According to the diverſity of the moving cauſes.] For thus, if the inflammation lies in the ends of the hepatic arteries, the inflammatory ſymptoms and effects will reſult ſooner, on account of the arterial blood, and the ſtronger impulſe from the heart upon the obſtructed capillaries; but the effects will come more ſlowly if the ſame malady lies in the converging extremities of the vena portarum, through which the blood has a ſlower courſe, as we before declared at §. 915. At the ſame time it is alſo eaſily apparent, that if the hepatitis be joined with a very violent fever, there will be proportionable reaſon to fear the moſt fatal events; ſince to reſolve an inflammation requires a ſedate motion of the humours (ſee §. 386.) and ſince every other ending of an inflammation in the liver is ſo extremely dangerous.

§. 918. BUT when the common nature or eſſence of an inflammation has once taken place in the liver, it obſtructs the ſmall veſſels; ſtops the current fluids; elevates the ſolids into a ſwelling or tumour; compreſſes the parts adjacent, and introduces in them the like effects as in its own proper ſeat: From thence the inflammation gradually ſpreads, or increaſes, till it has almoſt occupied the whole liver; it alſo compreſſes or hinders the dilatation of the ſtomach; and when that is itſelf filled, it again cauſes a painfulneſs of the liver, as well as of the diaphragm. The hepatitis, thus formed, hinders the courſe of all the arterial blood paſſing through the cœliac, and through the two meſenterical arteries, by ſtop-

ſtopping up its way through the liver; conſequently it occaſions an entire arreſtment of all the venous, arterial, and lymphatic juices, flowing within the viſcera, thoſe of the abdomen more eſpecially; it perverts the formation, ſeparation, excretion, and the uſual return or circulation of the bile, with its action in the duodenum; and therefore occaſions a jaundice, with all its effects; and particularly it melts all the humours, and even the abdominal viſcera, into a ſtate of putrefaction, from whence an infinite number of maladies follow.

Here are enumerated the effects which flow from an inflammation of the liver as the cauſe; which effects being obſerved, afford us alſo the diagnoſtic ſigns of an hepatitis then preſent. But in what manner theſe effects flow or ariſe from the cauſe, we have before explained in our hiſtory of inflammation, §. 382: and from thence one may eaſily conceive, that the ſmall veſſels, ſtuffed and ſwelled with impervious juices, will compreſs and ſtraiten ſuch others as are near or contiguous to them; by which means that inflammation, at firſt confined to a ſmall part only of the liver, may ſoon be ſpread throughout that large viſcus; namely, whenever the cauſes, productive of the diſtemper, either increaſe, or ſtill continue their firſt operation.

But as a large portion of the liver lies incumbent upon the ſtomach, it muſt of courſe hinder the dilatation of that receptacle of our nouriſhment whenever it is enlarged or ſwelled by violent inflammation; as, on the other hand, the liver itſelf will be alſo compreſſed by the ſtomach when diſtended with food, ſo as to occaſion an increaſe of all the complaints: and the ſame alſo holds true of the diaphragm, which lies contiguous to the convex part of the liver. From hence Galen, in a paſſage cited from him at §. 915, reckons a loſt appetite, ſickneſs, and vomiting, among the ſigns of an hepatitis, whenever the inflammation lies in the

the hollow part of the liver next the ſtomach; but if the ſeat of the inflammation be in the gibbous part of the liver, then there will be a greater pain in breathing, that ſhoots up ſometimes as high as the throat, and is joined with a cough; the falſe ribs likewiſe, being thruſt outward into a ſwelling, become painful, and in lean perſons are by the inflammatory turgeſcence of the tumour urged into a protuberance, conformable to that of the liver itſelf.

But it will be eaſily perceived, that all theſe ſigns are only preſent when the whole body of the liver, or at leaſt the greater part of it, is poſſeſſed by the inflammation; for a ſmall or ſlight phlegmon of this large viſcus will not be attended with ſo many ſymptoms, becauſe they principally ariſe from the actions of the circumjacent parts impeded by the ſwelled liver. For numerous obſervations ſeem to teach us, that the liver in its own ſubſtance is not ſuſceptible of any pain that is very acute; and ſometimes I have known an abſceſs found in the liver of perſons deceaſed, when they have not before complained of any pain about the affected part during the whole courſe of their malady, in which they have felt only a ſenſe of heavineſs or an oppreſſing weight. The ſame is alſo confirmed by the obſervations of La Motte [a], more particularly in a perſon whoſe abſceſs in the right hypochondrium had laid bare the liver, ſo as to expoſe to the view as much of it as was equal to a hand's-breadth, which became afterwards thereby ulcerated; for whenever he deſignedly handled the liver with his fingers, or with chirurgical inſtruments, the patient felt nothing of it.

Hinders all the arterial blood of the cœliac, *&c.*] It appears from anatomy, that the ſtomach, pancreas, and ſpleen, receive their arteries from the cœliac, while the meſentery and inteſtines are ſupplied by the two meſenterical arteries, namely, the upper and the lower. It is alſo known, that all the blood brought by theſe arteries is from them derived into one vein called *vena portarum*, by which it is afterwards moved

[a] Traite de Chirurgie, Tom. I. p. 318.—329.

ved or distributed throughout the liver; excepting from hence, perhaps, only a small number of branches, described by the celebrated Ruysch in his last works, as serving to the nutrition of these parts, and conveying their blood directly to the cava, without entering through the liver[b]. Therefore, whenever a violent inflammation has occupied the liver, the course of the blood through it by the vena portarum is thereby suppressed or impeded; whence the venous blood of the other abdominal viscera will not be able to enter the vena portarum, that is now itself over-full or distended; and thence again the blood from the final arteries will not be able to gain a passage into or through their corresponding veins, that are already over-filled. It is therefore evident, that the circulation of all the humours through the abdominal viscera will be hindered when the liver is stuffed up with impervious blood; and consequently there will be great danger lest the over-distended vessels may be broken, or lest a sudden gangrene may follow (§. 419.) from the intercepted flux of vital humours through the arteries to be returned by the veins. Under these circumstances, then, there will be often intolerable oppressions or anxieties, and troublesome pains in various parts of the abdomen, but more especially about the heart, as we observed before upon another occasion, §. 632. And now a violent vomiting will often attend, by which these patients are sometimes relieved. For it seems, that the venous blood, by a retrograde course, may be urged from the distended veins back again through the arteries, by the violent concussions and pressures of the abdominal viscera from the respirative muscles in the time of vomiting; and this may be done whenever the resistance at the opening of the final arteries is greater than the force driving the blood from the basis to the apex of the artery, as we said before in treating upon the Cure of Obstructions, at §. 141, nº 1. For it is observable, there are no valves in the mesenterical veins; and the periodical or temporary jaundice, that often follows these violent oppressions and fits of vomiting

[b] Herm. Boerh. Institut. sect. 336.

vomiting, ſhews, that even the bile is by this force driven back from the liver again into the blood; and even injections of wax thrown into the vena portarum have been ſeen to return through the hepatic arteries, as we but lately remarked, §. 915. From hence we underſtand how, in chronical diſeaſes, the whole liver being rendered ſchirrhous, and ſometimes contracted like tripe or dry leather, as I have obſerved in opened bodies, the patient nevertheleſs continues to hold out even for a conſiderable time under a languid and unhealthy courſe of life.

The formation of the bile, *&c.*] For all theſe depend upon a free paſſage of the blood of the vena portarum through the liver. But according as the inflammatory tumour formed in this viſcus ſhall compreſs different parts thereof, it is evident enough that the correſponding veſſels will be compreſſed which ſerve to ſeparate and diſcharge the bile. But the circulation of the bile is alſo truly diſturbed or perverted in this caſe; which ſeems to be in the following manner: The magnitude of the liver, and the great capacity of the biliary pores, with the quantity of blood carried to the liver for the ſecretion of the bile, ſeem to teach us that a very great proportion of this fluid is drained off by the liver, and poured from thence by an ample or common duct into the duodenum: but in a healthy perſon the fæces of the inteſtines are of a ſolid conſiſtence; whence it follows, that almoſt the whole maſs of the fluid ſecreted by the liver, and poured into the cavity of the inteſtines, is again ſecerned or drunk up by the abſorbing veins, from the alimentary and fæcal contents, before they arrive to the anus.

But of theſe abſorbing veins there are found two kinds in the inteſtines; namely, the lacteal veſſels, which lead to the thoracic duct; and the final or leaſt extremities of the meſeraical veins, that open into the cavity of the inteſtines. But ſince in the lacteal veſſels and thoracic duct there is found nothing of a bilious humour, there remains only one other courſe for the ſaid abſorbed humour to paſs through; namely, the meſeraical veins: and by theſe the hepatic

bile, and perhaps a great part of the cystic bile, is again sent, with the blood of the vena portarum, into the liver; that thus, by a repeated circulation, it may be again returned more efficacious for the several purposes to which it is designed. But then, that this may be effected, it is equally plain that there is required a free course for the humours to pass thro' the final extremities of the vena portarum in the liver.

Therefore occasions a jaundice, with all its effects. Galen has thus defined this malady: *A jaundice is the bile refunded upon the skin; from whence the surface of the body appears tinctured with a yellow colour, and the skin itself is vitiated by it, while the afflicted have white-coloured stools*[1]. Namely, when the bile, not having its usual exit into the intestines, returns back from the liver into the blood, and with that spreads itself throughout the whole body. But since the hepatic bile differs in colour from that of the cystic, and both of them often put on a different colour from that which is natural to them; from thence there will be a variety of the colours of icteritious people. Sometimes they are pallid, or of a yellowish-green colour: sometimes they are of a deep yellow, or saffron-colour: and sometimes of a deep green, inclined almost to black. Yet physicians have generally distinguished but two kinds of the jaundice; namely, the black and the yellow; although there be in reality a great diversity or number of colours betwixt the slightest yellow-jaundice, and that which descends almost to black, as Aretæus[m] hath well remarked. But since the white parts of the eyes are tinged of a yellow colour in this malady, they generally afford the first sign of a jaundice; and from hence the Greeks have derived the name of this distemper (ικτερος, *icterus* from ικτις, a kind of ferret or weazle of the woods that has eyes tinctured of the same colour. But Suidas will have it rather derived (απο των ικτινων) from kites, because the eyes in those birds are observed c-

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1 Icterus est bilis refusio in cutem, quo fit, ut superficies tingatur lutea fiat, et vitiatur cutis, et albae illis fiant ventris dejectiones. *Definit. Medic.* nº 276. *Charter. Tom. II. p.* 264.

m De Causis et Signis Morbor. Diuturn. lib. i. cap. 15. p. 45.

the ſame colour [n]. The Latins have called it *morbus regius*, becauſe they believed the fare or luxury of a court to be in a manner almoſt neceſſary to its cure; *lecto etiam et conclavi cultiori, uſu, loco, ludis, laſcivia, aliis, per quæ mens exhilaretur: ob quæ regius morbus dictus videtur* [o]; namely, "an indulgent elegancy of "bed and board, the fine ſituation, uſages, ſports, "laſcivious and other entertainments, by which the "mind is rendered chearful; on which account the "malady ſeems to have been called the royal diſeaſe." They have alſo called it *morbus arcuatus*, from the variegation of the ſkin reſembling the colours of the rainbow. Others have called it *aurigo*, from its golden or yellow colour.

But ſome may ſay, is it not doubtful whether an inflammation of the liver can produce a jaundice? The moſt certain obſervations have taught us, that every impediment which hinders the free diſcharge of the bile from the liver and bladder into the duodenum or inteſtine, may produce a jaundice. Thus, for example, in new-born infants a jaundice is often obſerved from the glutinous clogging humours collected in and ſticking to the ſides of the inteſtine; but that jaundice is eaſily cured by expelling the congeſted humours with a ſlight purgative. I have obſerved in ſome women a jaundice during the time of the pregnancy, although they were not troubled with that diſtemper either before or after their child-bearing. And poſſibly this might be effected by the enlargement of the womb, compreſſing the abdominal viſcera, and diſplacing the inteſtines after a wonderful manner from their ordinary ſituations: and ſometimes they have voided moſt hard fæces of a very conſiderable bulk, by ſtools, for ſome days after their delivery; after which their yellow or icteritious colour has entirely vaniſhed: from whence, I think, we may probably ſuppoſe the colon to have been diſtended by ſuch accumulated fæces, in that part where it lies under the liver, ſo as to compreſs the cyſtic duct. If therefore an inflammatory ſwelling

[n] Petit. Comment. in Aret. ibid. p. 187.

[o] Celſ. lib. iii. cap. 24. p. 176.

of the liver be formed in the ſame place, ſo as to compreſs the exit of the cyſtic duct, there is then no doubt but ſuch an hepatitis or inflammation of the liver may produce a jaundice. But it is not ſo very apparent, that every hepatitis may be the cauſe of a jaundice, namely, inaſmuch as it impedes the ſecretion of the bile by the ſtuffed up extremities of the vena portarum, or if the adjacent ſecretory ducts are compreſſed by the ſame diſtended and inflamed veſſels that lie contiguous to the ducts which contain the bile already ſeparated from the blood of the vena portarum. Certain we are, that the cyſtic bile differs both in colour and taſte from the hepatic; and there are numberleſs arteries ramified throughout the gall-bladder with wonderful artifice, and in very peculiar diſtributions, as we are taught by anatomical injections; whence it ſeems not improbable, that they may be ſome way ſerviceable towards the preparation and ſecretion of this bitter fluid. Add to this, that naturally in the liver we obſerve neither bitterneſs nor a yellow colour; and therefore, when a jaundice tinges the ſurface of the body of ſuch a colour, it ſeems to follow that it muſt be from an impediment to the excretion of the cyſtic bile into the duodenum, whence it is driven back again into the blood [p]. This opinion is confirmed by obſervations made in deceaſed bodies. Abſceſſes, even of a conſiderable bulk, have been found in the liver without any preceding jaundice; and other tumours have been found likewiſe, which by their bulk muſt have compreſſed a great many of the adjacent biliary ducts and veſſels. On the other hand, when the bodies of thoſe deceaſed of a jaundice have been opened, the cauſes have manifeſtly appeared, and been found ſuch as hindered the diſcharge of the cyſtic bile into the duodenum; and among theſe the moſt frequent cauſe has been ſtony concretions blocking up the excretory paſſages of the bile, of which we ſhall ſpeak hereafter.

But in the mean time this deſerves to be remarked, that the blood of the vena portarum contains in itſelf the matter for the immediate formation of the bile, which

[p] Vide de his Medic. Eſſays, Vol. I. Art. 33. p. 305.

which muſt be ſoon after ſeparated from thence by the ſecretory ducts of the liver: ſo that if a large part of the final extremities of the vena portarum are ſtuffed with impervious humours, the ſecretion of the hepatic bile will be thence impeded; and that as yet unperfected bilious juice, which was about to aſſume the name of bile, will remain mixed with the blood, and be diſtributed therewith throughout the body; conſequently this muſt induce a bilious cacochymia of the blood, which thus retains a humour accumulated in itſelf, that ought not naturally to be there, or at leaſt not in that abundance. When continual or remitting fevers have been epidemical in the time of autumn, after very hot and dry ſummers, practical obſervations have then ſhewn us, that the liver has been often affected, and ſtuffed with a thick blood, that has had almoſt an artrabiliary tenacity: Now in ſuch patients there has not indeed been obſerved the intenſe yellowneſs of a jaundice; but the face looks of a waxen complexion, exhibiting a paleneſs mixed with a ſmall tincture of light yellow, as a ſign of this diſtemper: from whence it is evident, that at leaſt ſuch a ſlight kind of the jaundice may follow from an inflammation of the liver as its cauſe; ſince even Aretæus (as we remarked a little before under the preſent aphoriſm) has informed us there may be innumerable varieties of colour in different kinds of the jaundice. Moreover it is obſerved, that when the cyſtic bile begins to turn putrid, it eaſily tranſudes and penetrates through the adjacent parts, even when there is no obſtacle to it in the cyſtic or in the common biliary duct; for thus in dead bodies we often ſee the bile ſoaks through the gall bladder, into the adjacent colon, omentum, and peritonæum, and tingeth them with its own colour. When, therefore, the bile of the gall-bladder begins to be attenuated by the increaſed heat of the liver in an hepatitis or inflammation of it, thereby becoming diſpoſed to putrefaction, it may eaſily penetrate into the adjacent liver itſelf into which the gall-bladder is faſtened, and within whoſe ſubſtance there are apparently many open branches of veſſels,

communicating from one to the other.

But a jaundice being once formed from an hepatitis or inflammation, it is evident all its effects muſt follow; but of theſe effects we ſhall treat at §. 950, hereafter.

A putrefaction of all the humours and viſcera, *&c.*] When the liver, ſtuffed up, denies a free paſſage for the blood to flow through its ſubſtance by the vena portarum, all the abdominal viſcera which evacuate their venous blood into the ſaid portal vein are diſturbed in their reſpective actions, and a ſtagnation of their circulating juices is thus occaſioned in them. Moreover, the bile is of all the humours of the body the moſt inclined to putrefaction; and in dead bodies we obſerve that putrefaction commonly begins to ſhew itſelf firſt about the liver: but the blood of the vena portarum contains in it the immediate matter for forming the bile; and, therefore, it is evident how much reaſon we here have to fear a ſudden corruption of its texture. The moſt putrid diarrhœas, and dyſenteries, that frequently accompany an hepatitis, confirm the ſame thing. See alſo what we have before advanced upon Anguiſh from an hindrance of the blood's courſe through the vena portarum in the liver, at §. 632.

§. 919. AN hepatitis then terminates like an inflammation in the other viſcera, either in health, in other diſeaſes, or in death.

Here you may conſult what has been ſaid at §. 591.

§. 920. IT ends in health, either by the helps of nature, or of art.

See what has been ſaid concerning this two-fold way of cure, at §. 885; where we treated of a Pleuriſy curable by nature, or by art.

§. 921. BY nature, the malady is carried off either by a mild reſolution, or by a con-

concoction and excretion of the matter of the distemper.

Here you may peruse what was said upon the cure of a Pleurisy, at §. 886.

§. 922. THE distemper goes off naturally by resolution, if the matter of it be recent, of a mild disposition, and under the other conditions that were before mentioned (§. 386.); but art likewise promotes the cure by diluting, resolving, gently moving or agitating the said matter, by the use of epithems, drinks, clysters, *&c.*

What the necessary conditions are to qualify an inflammation to be cured by resolution, we before shewed more at large under §. 386. But here the greatest danger is to be feared from the acrimony of the humours to be moved through the liver; for the venous blood of the abdominal viscera may acquire a very great acrimony from mere stagnation only in such large vessels, as it appears in itself more inclined to putrefaction by the matter of the bile, which it contains, as we observed a little before. Again, there will be danger from the atrabiliary matter dissolved and put in motion, which then always acquires acrimony, and sometimes produces an hepatitis (see §. 916.); and in such a case it is easily apparent there can be no hopes of a mild resolution.

But if there are no signs denoting the functions of the body to be much injured, if the anxiety be small, and violence of the fever moderate, we may reasonably hope for a mild resolution of the distemper, which may be procured by a fluidity of the thickened or concreted humour dissolved and rendered fluxile through the vessels. In this case, then, art only administers plenty of a diluent vehicle, with such medicines as thin the blood, without exciting a quicker circulation, and are able to dissolve the cohesive matter that begins to clog up the final straits of the hepatic blood-vessels: such

ſuch are, the freſh whey of milk; thin broths, in which have been boiled leaves of lettuce, borrage, bugloſs, or the roots of vipers-graſs, *&c.*; freſh expreſſed juices of ripe garden-fruits, preſſed from them while crude, or after they have been dreſſed by fire, as the rob of currants, elder-berries, and the like, with ſal-polychreſt, nitre, tartar-vitriolate, *&c.* But ſuch more particularly are to be choſen as are the moſt averſe to the putrefaction which is here ſo much to be feared, and as are at the ſame time emollient in ſome degree, ſince a ſmooth unacrid ſtate of the humours is always neceſſary to a cure that is to be obtained by reſolution (ſee §. 386.). Slight frictions of the hypochondria, more eſpecially of the right, will be alſo uſeful after the ſaid diluents and reſolvents have been firſt uſed; for thus the matter beginning to clog the veſſels of the liver may be ſhook off, ſet at liberty from the obſtructed veſſels, and ſent forward through them. An epithem prepared from ingredients of this ſort, for ſuch a purpoſe, may be ſeen (at §. 890, no 2.) before. But clyſters are alſo here equally recommended; becauſe, while they lie in the colon, they impart the operation of an emollient foment to the liver; and becauſe the reſolving medicines this way injected may be drank up by the abſorbing veins, and paſs immediately to the affected part of the liver itſelf, with their virtues entire, or but little altered. We very often meet with the ſigns of a ſlight hepatitis in autumnal fevers; in which there is rather an oppreſſion, than a pain, about the præcordia; the face looks of a waxen colour; the urine is bilious; and ſometimes a ſlight yellowneſs appears in the whites of the eyes, more eſpecially to be diſtinguiſhed in the outer angles, or ſides of them: But by the method here preſcribed, theſe fevers are commonly cured with ſucceſs, while a neglect of them in the beginning, or the raiſing a great commotion by vomits, urging the unreſolved matter more deeply into the ſtraits of the impervious or clogged veſſels, often occaſions the moſt ſtubborn chronical diſtempers to be left after them.

§. 923.

§. 923. BUT an hepatitis goes off by concoction and excretion, when in the diſeaſe itſelf, firſt known by its proper ſigns, (§. 916, 919), there is, 1. A bilious flux of the bowels, intermixed with a little blood, before the fourth day. 2. A copious diſcharge of an acrid and thick urine, with a red or whitiſh ſediment, continued for ſome days, and appearing prior to the fourth day. 3. A ſlight pain ſupervening about the ſpleen before the ſigns of concoction. 4. A copious hæmorrhage from the right noſtril. 5. With ſweats, laudable as to their matter, ſeat, time, continuance, and effects.

We before treated at §. 594, concerning this twofold manner by which diſeaſes terminate in health; namely, by ſuch a reſolution of the ſtagnant viſcid as will enable it to flow eaſily through the veſſels without further miſchief; or elſe by a ſalutary concoction ſuppurative, with an excretion of the matter after it has once been put in motion, or returned into the circulation, but cannot there remain without prejudice to the health of the body; whence a diſcharge thereof by ſome ſenſible excretion becomes neceſſary. In the acute febrile diſtempers that have been hitherto conſidered, we carefully inquired after the ways by which a faithful obſervation has taught us the concocted matter of the diſtemper may be happily thrown out of the body; all thoſe particulars are applicable to the preſent aphoriſm, and therefore ought here to be each of them duly regarded.

1.] It was before ſhewn, at §. 830, where we treated on the cure of a peripneumony in this manner, by concoction and excretion of the matter of the diſtemper, that the inflammatory or obſtructing viſcid lodged in the final ſtraits of the leſſer arteries, being once reſolved and put in motion, formed a yellow ſpitting; and that ſometimes the dilated extremities of the veſſels preſſed out a ſmall portion of the red blood, which having

having entered the leſſer pellucid lymphatics, paſſed at length through their dilated extremities, which afforded a free opening for it into the cavity of the wind-pipe. We alſo ſhewed that the ſame matter, expelled by ſtool, was uſually termed *bilious* by Hippocrates, not for being properly in ſubſtance as the bile but from its having the like yellow colour. All this then, is here likewiſe true with reſpect to the liver wherein the inflammatory matter, being once reſolved and rendered moveable, may then find a ſhort and ready paſſage into the cavity of the duodenum, ſo as to be afterwards excluded by ſtool. And as the leſs ſkilful practitioners often are in fear of ruptured veſſels when they perceive the yellow ſpittings intermixed with bloody ſtreaks in pleuriſies and peripneumonies; ſo likewiſe, in the preſent caſe, they imagine a dyſentery attends, becauſe they ſee a bilious flux from the bowels with a ſmall quantity of blood: but they ſhould obſerve, that when the matter of the diſtemper is this way evacuated from the liver towards a cure, there are none of thoſe violent gripings in the lower belly, nor any of that troubleſome teneſmus or fruitleſs inclination to ſtool felt in the anus, which accompany a true dyſentery. But it is eaſily apparent the matter of ſuch a flux cannot always be diſcharged in its firſt or pure ſtate; but that, in paſſing through ſo long a tract of the inteſtine as from the duodenum to the anus, it may intermix with the other inteſtinal contents, in ſuch a manner as to afford no diſtinct appearance. But in this caſe we know the flux to be of the kind here deſcribed, from the relief which ſuch a diſcharge gives to the diſtemper; for ſuch a relief is by Hippocrates laid down as a general ſign in ſuch ſpontaneous fluxes from the bowels, as we obſerved before at §. 830, nº 3. However, he has alſo remarked, there may be ſuch a flow of yellow and viſcid matter from the bowels, intermixed with a little of the excrements, and yet be joined with ſome pain of the ſide and hypochondrium [q]. But we know the term *hypochondrium*, when it is mentioned abſolutely by Hippocrates,

[q] Prædict. lib. ii. nº 148. Charter. Tom. VIII. p. 798.

rates, without further diſtinction, always denotes hat of the right ſide. Galen has alſo applauded bili-us diſcharges from the inteſtines in an hepatitis, as ve have ſeen in a paſſage quoted from him at §. 915. But it is here ſaid, that ſuch a flux from the bowels ught to happen prior to the fourth day of the mala-ly; becauſe, if the diſtemper has been of longer ſtand-ng, there can be ſcarce any grounds to hope it will erminate in health, without inducing another diſeaſe; or even, one may rather fear a future ſuppuration or bſceſs.

2.] As the inflammatory matter reſolved in the li-er, may commodiouſly paſs into the inteſtines by the ommon hepatic duct, after it has firſt entered into he biliary pores or ducts; ſo, on the other hand, he ſame matter may paſs from the obſtructed ends of he vena portarum, into the vena cava; and after mixing with the circulating juices, it may be expelled rom the body by various paſſages. But ſince by the aws of nature the urinary paſſages are thoſe by which offenſive matters are commonly exterminated from he habit, to which a retention of them muſt be miſ-chievous, therefore the preſent offending matter may ikewiſe eſcape by theſe ways. See what was ſaid up-on a ſalutary diſcharge of the matter of a diſtemper by urine, in the commentaries to §. 594, and to §. 830; n which laſt place we treated of the cure of a Perip-neumony by the like urines. Galen, in a paſſage be-fore quoted from him, obſerves, that copious diſchar-ges by urine may relieve an hepatitis; and Trallian[r] recommends the roots of ſmallage ſlightly boiled in oxymel, for an hepatitis, whenever the inflammation has begun to concoct or digeſt the matter; which, as he remarks, may be afterwards carried off by urine, ſo as to diminiſh the ſwelling.

3.] We know from phyſiology, that all the blood of the ſpleen paſſes by the ſplenic vein into the liver; and therefore it is very apparent, that, the liver being tuffed up, the free courſe of the blood through the ſpleen will at length be hindered. But when the ob-ſtructions

[r] Lib. viii. cap. 1. p. 392.

ſtructions of the liver begin to relent, a free motion will be quickly reſtored to the blood thro' the ſpleen, in conſequence of which the blood of the ſplenic arteries will be probably imported with a greater impetus, which may occaſion ſome ſlight uneaſineſs, but of no long duration. Now it is evident enough, ſuch a ſlight painfulneſs of the ſpleen does not help the diſtemper towards an expulſion of the morbific matter, only ſerves as a ſign to ſhew that the ſtuffed veſſels of the liver begin to be ſet at liberty; and therefore that we are then to expect a diſcharge of the matter, now diſſolved and at liberty to flow out by the emunctories or excretions. At the ſame time it is alſo evident, that in this caſe only a ſlight painfulneſs about the ſpleen is to be reckoned a good ſign, while as yet there are no appearances of ſuppuration; for in a violent hepatitis, and where a vomica or abſceſs has once formed itſelf in the liver, ſuch a pain ariſes in the ſpleen, becauſe the ſplenic vein is unable to deliver its blood into the vena portarum. Thus alſo we ſometimes obſerve ſuch a painfulneſs about the ſpleen when the liver has hardened into a ſcirrhus, and often in an obſtinate jaundice. Moreover, as we ſhewed at §. 741, a tightneſs about the hypochondrium, either to the right or left, ſtands for a ſign of a critical hæmorrhage about to come from the noſe, of which we ſhall ſpeak in the next paragraph.

4.] How much good may be done by an hæmorrhage from the noſe in acute diſeaſes that are curable, has been more than once declared before; and particularly at §. 741, where it was obſerved, that an ardent fever itſelf is ſometimes thus terminated. Nor is this hæmorrhage only ſerviceable by leſſening the quantity of the blood, as it ſeems very probable; ſince it is obſerved to give much more relief than any other evacuation of blood whatever, that is made by art. I have even frequently obſerved the blood diſcharged of a much blacker colour by theſe hæmorrhages in acute diſeaſes, without having that florid appearance which is proper to arterial blood; and the flux has afforded the greateſt relief. I lately obſerved this in a pleuritic

pleuritic youth, who after the fifth blood-letting scarce found any relief to his distemper; but by a copious flux of black blood from his nostrils the fever immediately abated, with a considerable relief of all the symptoms. Hippocrates has also observed the like relief from such an hæmorrhage in a hard and painful swelling of the hypochondrium: *But it also happens to these patients, in the first stage of the malady, that a flux of blood comes from their nose, and gives them great relief*[s]. And Galen[t] likewise affirms, "That all hot "and acute inflammations which are formed in the "hypochondria, are terminated by a critical hæmor-"rhage from the nose." But then he adds, that the blood must flow from the direct or corresponding side, namely, from the right nostril when the liver is affected, and from the left when the spleen or parts adjacent are disordered; which is an article only observed and confirmed by the ancient physicians, as we declared more particularly at §. 741. Yet this rule is perhaps sometimes subject to exceptions. We read that the wife of Heraclides *, afflicted with an acute fever, became icteritious on the third day of the malady; that on the fourth day a considerable flux of blood came from the *left* nostril, and on the seventh day the disease came to a complete crisis. It is true, this woman had also a regular flux of her menses, and sweats all over her body, which were critical; for which reasons we cannot altogether ascribe the termination of this malady to the hæmorrhage from the left nostril only: but then we know diseases are often observed to end not by one discharge barely, but that several different evacuations critically cure diseases, and particularly such as are of the kind above-mentioned. For Hippocrates[u], in another place, cautions us, that ardent fevers are in some patients followed with a jaundice on the sixth day; and that, in such, a discharge of that matter by urine, or by a purging or flux of the bowels,

[s] Accidit autem et his, in primo circuitu sanguinis e naribus profluvium, et plurimum confert. *In Prognostic. Charter. Tom. VIII. p. 613.*

[t] De Crisibus, lib. iii. cap. 4. ibid. 430. * Epidem. 7. Ægrot. 134. Charter. Tom. IX. p. 599.

[u] Epidem. 1. textu 65. Charter. ibid. p. 66.

or by a copious hæmorrhage, was found ſerviceable: and at the ſame time he remarks, that all three of theſe evacuations ſucceeded in the caſe of Heraclides, whoſe fever terminated critically on the twentieth day.

5. Concerning ſweats that critically diſcharge the matter of the diſeaſe from the body after it has been ſubdued and rendered fluxile, we have before treated at §. 594, nº 2. where we conſidered all the particulars here mentioned. Galen [w] has obſerved, that the bile, returned back into the blood, has diſcharged itſelf by bitter ſweats from the body, in icteritious perſons whoſe liver has been ſtuffed up; and thick or clammy ſweat, tinging the linen of a yellow or ſaffron-colour, to the relief of a woman in a jaundice, was ſeen by Chomel [x]; and the jaundice went off after the ſaid ſweat.

§. 924. WHEN the former of theſe critical diſcharges (namely, a purging, §. 923, nº 1.) ſhews itſelf, immediately ſuch epithems, clyſters, fomentations, drinks, aliments, and medicines, are to be adminiſtered, as are able to dilute, reſolve, abſterge, circulate, and gently expel the matter by this outlet, and which are more eſpecially of a diſpoſition oppoſite to a bilious putrefaction.

Hippocrates has laid it down as a general rule in the cure of diſeaſes, (which we mentioned before at §. 605, nº 13.) "That when it is neceſſary for us to "evacuate any matter or humours, they are to be diſ- "charged by the paſſages to which nature moſt in- "clines them, through parts that are of a ſuitable diſ- "poſition." Therefore, when the bowels begin to ſend forth a bilious flux, intermixed with a little blood, before the fourth day, it will be proper to promote that evacuation, not by ſtrong purgatives that diſturb the whole body, but by mild abſterſives, which are able

[w] De Sanitate Tuenda, lib. iv. cap. 4. Charter. Tom. VI. p. 120.
[x] Acad. des Sciences, l'an 1737. Hiſt. p. 69.

able further to attenuate the matter of the diſtemper, render it fluxile, and promote with a gentle ſtimulus its expulſion by ſtool. Thus the freſh-made whey of new milk in the ſpring or ſummer-ſeaſon, while the cattle cheerfully feed upon the green paſturage, makes one of the beſt remedies, whether it be given under the denomination of a drink or a medicine; but this will be rendered ſtill more efficacious, if it be boiled with thoſe herbs which are by botaniſts uſually called *planipetalous* and *lacteſcent*, as ſow-thiſtle, endive, ſuccory, dandelion, and the roots of vipers-graſs, *&c.* whoſe extraordinary virtues in reſolving a febrile viſcid we before commended at §. 614, and which are likewiſe adviſed for an inflammation of the liver by Trallian [y]. But ſince in the preſent caſe (by §. 918.) a ſudden putrefaction is to be feared; therefore, to obviate this evil, ſubacids or aceſcents are choſen. Tamarinds, or the rob of elder-berries and of currants, with the ſyrup of citron-juice, diluted in whey of milk, barley-water, oat-gruel, and the like, are therefore uſually given here to advantage. Forms of this kind may be ſeen in the Materia Medica, at the number of the preſent aphoriſm. At the ſame time alſo epithems and fomentations are applied to the right hypochondrium, and to the whole abdomen, like thoſe which we before recommended for the cure of a pleuriſy, at §. 889. n° 3. But clyſters alſo, prepared from like, are injected often to waſh the large inteſtines; and with a deſign, that, if they be long retained, a part of them may be drunk up by the meſenteric veins, and by them paſs on directly to the liver, and prove uſeful by diluting, reſolving, and abſterging. Thus Hippocrates [z], in the cure of an *hepatitis*, commends a clyſter of the decoction of beet-leaves mixed with honey and nitre; and he gave ſuppings prepared from barley with honey, and for drink honey with water and with vinegar, which relieve by the ſame virtues as thoſe above-mentioned.

[y] Lib viii. cap. 1. p. 391. Charter. Tom. VII. p. 671.

[z] De Internis Affection. cap 50.

§. 925. BUT if the other condition, that inclines the matter to go off by urine (§. 923, n° 2.), attends this malady, thoſe helps are to be put in practice which were before directed (§. 889. and 888, n° 2.); to which we may add ſuch things as are a little deterſive.

Concerning the manner in which this excretion of the morbific matter is to be promoted, and carried through the kidneys, we before treated in the cure of a Peripneumony at §. 853, and of a Pleuriſy at 889, n° 2. Thoſe remedies we recommended in the preceding paragraphs, are here likewiſe uſeful, almoſt all of them; more eſpecially if they are taken diluted in a large quantity of the whey of milk, to afford a plentiful vehicle for the urine. Dandelion, and the like plants, which have a deterſive and diuretic force, will be likewiſe of uſe to the ſame end: for here we have no need of the ſharper diuretics, only thoſe of the milder ſort.

§. 926. IN the third caſe (§. 923, n° 3.) of a painfulneſs about the hypochondrium, the ſame courſe (§. 924, 925.) is to be purſued; but the ſpleen, and the whole ſpace extending to it from the liver, is to be treated with fomentations of the like kind.

Since the pain of the ſpleen (as we obſerved at §. 923, n° 3.) is a ſign the matter of the diſeaſe obſtructing the liver is now rendered fluxile or moveable, it plainly appears that nothing more is required than what was before laid down.

§. 927. IN the fourth caſe (§. 923, n° 4.) of an hæmorrhage, the noſtrils are to be externally and internally fomented with emollient and warm liquors, till blood enough has been diſcharged to relieve the ſymptoms: but afterwards, if

if the flux of blood continues to exceſs, it muſt by degrees be checked or ſtopped by ſtyptics, with ſuitable diet; but this muſt not be done too ſuddenly.

By what ſigns one may foreſee a future hæmorrhage from the noſe in diſeaſes, was before declared at §. 741; and therefore, when thoſe ſigns are preſent, it is our buſineſs to promote this ſalutary diſcharge of nature, which may be very well effected by the application of warm fomentations to the forehead, and more eſpecially by warm vapours drawn in through the noſtrils, which much more relax and mollify than hot water itſelf. Such large and critical hæmorrhages from the noſe uſually leſſen all the ſymptoms immediately, and it is ſeldom that any danger attends from too copious a flux of the blood; for ſo ſoon as the patient begins to be weakened, and to ſink almoſt into a fainting or ſwoon, the open arteries in the noſtrils then contract, and the hæmorrhage ceaſes. But if the blood ſhall continue to flow after the ſigns of ſuch a fainting have appeared, it ought then to be ſtopped, and not otherwiſe; for there will be great danger of a fatal return of the malady, if the over-timorous phyſician ſhall too haſtily ſuppreſs the hæmorrhage. But in what manner, and by what remedies, an hæmorrhage from the noſe may be ſuppreſſed, and what particulars are to be obſerved in this reſpect, may be ſeen where we before treated upon the ſame ſubject, in the commentaries to §. 743. Forms of ſtyptics for this intention may be ſeen in the Materia Medica, at this number; where there are ſeveral, differing in ſtrength, according to the particular circumſtances.

§. 928. FINALLY, in the fifth condition of this malady, under the critical ſweats (§. 923, n° 5.) a plentiful uſe of diluent and abſterſive decoctions is neceſſary.

The critical ſweats of the kind here mentioned are to be kept up or continued by a plentiful uſe of di-

luent liquors; and ſuch internals as are nearly of the ſame kind with thoſe ordered at §. 924, are here ſerviceable: but the heating ſudorifics, which operate by cauſing a greater motion in the humours, cannot here be ſo ſafely truſted. Plenty of the whey of milk drank hot, and in a warm bed, will ſucceſsfully ſupport and forward ſuch critical ſweats, and at the ſame time ſufficiently repleniſh the blood with ſuch liquid parts as are required to prevent its being over-drained or thickened by ſuch great ſweats.

§. 929. DURING theſe critical diſcharges (924, to 929.) it is a caution more eſpecially to be obſerved, not to let any of the matter of the diſtemper remain behind in the viſcera, or parts affected, from which it will be difficult afterwards to remove; and thus you cure the firſt or mildeſt kind of the jaundice.

So long as the motion of the fever continues moderate, and treated with the reſolvent medicines before adviſed, the obſtructions formed in the liver may be opened, ſo as to reſtore the patient to perfect health; but if, when the diſtemper is going off, the tired patient refuſes further help, or if the phyſician careleſsly neglects to treat timely the remains of the diſtemper, chronical diſorders are then uſually left behind, which prove extremely difficult to cure, particularly ſchirrhous indurations in the liver. In autumnal epidemical fevers, which follow after the hotteſt ſummers, it often happens that a ſlight inflammation of the liver is an attendant among the other ſymptoms; and when ſuch a fever is removed, or extinguiſhed, before the febrile viſcid that lodged within the obſtructed veſſels of the liver be thoroughly reſolved, the ſurviving patient often lives in an unhealthy or languiſhing way, with a pale-yellowiſh or waxen countenance, and is not without the utmoſt difficulty recoverable to ſound health; at leaſt it will be a work infinitely more laborious, or difficult, to remove obſtructions in the liver that are once con-

confirmed and inveterate, when they might have been eaſily reſolved in the beginning of the diſtemper. But this difficulty here principally ariſes from the loſt or ſpent motion of the blood, which now becomes venous in the portal branches, and moves by them through the liver with much leſs force, as being deſtitute of that impulſe from the heart and arteries which urges the blood through other parts. Hence Hippocrates [a], who deſcribes an hepatitis (but with a different appellation), well obſerves to us, that many who have had their diſtemper only quieted or imperfectly cured, have afterwards had a return of the ſame malady, and that then they are in great danger of a conſumption; and he afterwards adds, that, for forty-five days after the violence of the diſtemper is over, the patient ought to keep to the lighteſt or beſt regimen of diet, and make the whey of milk his daily drink, if the ſeaſon of the year favours, becauſe the diſeaſe is ſtubborn, and requires a long treatment.

But of the ſigns which denote a perfect cure of the malady, we ſhall treat at §. 931.

§. 930. IF the hepatitis be recent but violent, and without affording any ſigns of hope, or of critical diſcharges (§. 922, 923.), it muſt then be treated with the ſame cautions, with the like remedies, and under a ſimilar regimen, with what we before preſcribed (§. 890) for a pleuriſy or an inflammation of the diaphragm (§. 911.), and the like diſtempers; only here, more particularly, relief may in a greater degree be had from thoſe things, which, having a gently cooling force, relax the bowels at the ſame time, both adminiſtered as drinks, and injected as clyſters.

What treatment is neceſſary towards inflammatory diſeaſes that give us hopes for obtaining a cure by a reſo-

[a] De Internis Affection. cap. 50. Charter. Tom. VII. p. 674, 675.

reſolution of the phlegmon, while at the ſame time there appear no ſigns which denote that the matter of the diſeaſe is concocted and diſpoſed for excretion, we have already ſufficiently explained under the acute inflammatory diſeaſes that have been hitherto expounded; for they require to be treated after the ſame manner: and for this reaſon Hippocrates[a] only ſays, ſpeaking of an hepatitis, "To this malady, when "painful, it is proper to apply the ſame and other "fomentations as in a pleuriſy." We ſhall not therefore now again repeat thoſe particulars. But things which gently relax the bowels, without exciting any great purgative commotion, are here more eſpecially applauded; both becauſe it is of ſervice to have the large inteſtines diſencumbered of fæces, that there may be no preſſure or diſtenſion on the liver from the colon, which laſt runs a conſiderable way under and in contact with the former; and becauſe it is neceſſary to have a free and open paſſage, by which the obſtructing matter reſolved in the liver may gain an eaſy deſcent, by the hepatic duct, into the inteſtines. Clyſters are alſo recommended for the ſame reaſons; and becauſe, when they are injected and long retained, they both foment and are drank up by the meſeraic veins, ſo as to paſs directly to the liver with their medicinal virtues little or nothing altered. Aretæus[b] ſeems to hint at ſomething of the ſame kind when he ſays, "Abſtinence is firſt to be enjoined to the pa-"tient, and afterwards a ſpare diet, that the liver "may be empty for the medicines to enter into it;" that is to ſay, for the medicines to penetrate eaſily into the ſmall ſtraits of the veſſels. In the Materia Medica, at the number of this aphoriſm, the principal remedies that conduce to theſe purpoſes are enumerated, and ſome compound forms are given.

§. 931. BUT the ſigns of a complete cure made in this malady are, If there be no remains

[a] Ibid. cap. 39. p. 659. [b] De Curatione Morbor. Acut. lib. ii. cap. 6. p. 106, 107.

remains of that diſcolouration in the eyes, face, urine, and ſtools, which is peculiar to a jaundice; with the abſence of the other ſymptoms, (§. 918.)

The effects of a preſent hepatitis were reckoned up at §. 918, which make at the ſame time the diagnoſtic ſigns of this malady. Among thoſe ſigns the icteritious colour is mentioned, with a remark upon the degrees and varieties that may be obſerved therein. But ſuch an icteritious colour always denotes, that either the bile, or the immediate matter for making bile, returns back again from the liver into the whole blood, wherein it ought not naturally to reſide; and therefore it implies ſome vice or defect in that organ, whoſe office is to ſeparate the bile, and pour it into the inteſtines. But a jaundice-colour always firſt ſhews itſelf in the tunica adnata, or white of the eye, which is alſo the laſt viſible ſeat from whence this appearance of the diſtemper withdraws; for when the other ſymptoms of an hepatitis have already ceaſed, or at leaſt are greatly abated, ſuch a colour ſtill remains there, although it be fainter. So likewiſe, in this malady, the urine is obſerved of an intenſe yellow colour, and the fæces the of inteſtines look whitiſh or of a clay-like grey colour, when the bile is either wholly intercepted, or at leaſt ſent in a much leſs quantity into the inteſtines than it uſually was ſent in time of health.

When, therefore, no further yellowneſs is obſervable in the eyes; while the pale, yellow, or waxen colour goes off from the face; and the urine, with the inteſtinal fæces, recover their natural appearance; while at the ſame time no pain or oppreſſion is felt about the right hypochondrium, eſpecially after feeding or filling the ſtomach, or after ſomewhat more than uſual exerciſe of body; we then know the cure of this malady to be complete; and more eſpecially when, for ſeveral weeks after, there are no returns of theſe ſigns or complaints: for great care is here neceſſary, not to leave behind any remains of the diſtemper within the liver, ſince moſt chronical diſtempers take their origin from

from an inflammation of the liver either neglected or ill cured.

§. 932. WHAT has been hitherto advanced upon this malady, will lead us into a knowledge of the origin, nature, effects, and cure, of the second and more mischievous kind of the jaundice.

The author of these aphorisms here distinguisheth several kinds of the jaundice, according to the diversity of the productive causes; yet the same appellation is still continued to the distemper, while at the same time a very different method of cure is required in it.

§. 933. BUT if, when the liver is thus inflamed (§. 914, 915.) the forementioned remedies (§. 922 to 931.) are used either too late or not all, or are applied without success; the cause now becomes greater, and in consequence a suppuration will arise in the liver as in other parts (§. 387, 402.): only here, from the abundance of the almost stagnant juices, either bloody or bilious, there will seldom be formed a mild or laudable matter, unless it be in little portions on the outer surface of the liver; but generally a fatal putrefaction.

In what manner, and from what causes, an inflammation may tend to a suppuration, has already been declared, both in our history of inflammation, and in the acute inflammatory diseases before considered; and therefore it will be here sufficient only to remark what renders a suppuration more dangerous in the liver than in other parts of the body.

The whole liver is full of blood; and is so soft and friable a viscus, that, as Aretæus [d] observes, *totum jecur est instar sanguinis gelati*, "it is wholly like un-

"to

[d] De Curatione Morbor. Acut. lib. ii. cap. 6. p. 106, 107.

" to a mafs of congealed blood." But this blood it is which contains the immediate matter of the bile; befides which, a very conſiderable part of the liver is made up of ſecretory ducts already full of bile: for which reaſons, as was before ſhewn (at §. 918.) all theſe parts are ſo much inclined to a putrefaction. But, on the contrary, a benign or laudable ſuppuration (ſee §. 387.) requires the humours to be of a diſpoſition mild, or without acrimony; and therefore it is evident a fatal putrefaction is always to be feared in the liver, and muſt take place there much oftener than a laudable ſuppuration. From hence Aëtius [e] tells us, " That it is cuſtomary for ſuch humours to " flow from ulcers of the liver, as altogether re- " ſemble thoſe that drain from corrupting bodies." I have frequently ſeen, as a very nauſeous ſpectacle, in bodies dead of an hepatitis, that ſuch a cadaverous or corrupted filth, of the moſt intolerable ſmell, has iſſued out through the noſe and mouth. Therefore Hippocrates has very well remarked the different events of a ſuppuration formed in the liver, when he pronounces, *Thoſe who have an opening made by cauſtic or cautery from an abſceſs in the liver, recover if the diſcharged matter be laudable, or pure and white; for in theſe caſes the matter is included in a cyſt or tunic: but if the matter flows out like filthy lees of oil or wine, ſuch patients are loſt* [f]. For when a laudable ſuppuration is formed, the matter gathers itſelf within one confined ſpace, and is probably more eſpecially thus conditioned when the abſceſs is ſeated in the outer and convex part of the liver covered over and confined by the outer membrane thereof: but when the abſceſs is formed within the interior ſubſtance of the liver, it then changes every thing into ſuch a putrid filth as reſembles dregs or lees, leaving no hopes of a recovery.

§. 934. SUCH a ſuppuration is known to be *approaching* in the liver, 1. From the ſigns

[e] Serm. X. Latin. edit. p. 206.

[f] Qui ſuppurato hepate uruntur, ſi pus purum et album fluat, evadunt; in tunica enim his pus ineſt: ſi vero qualis amurca fluat, pereunt. *Aphor.* 45. *ſect.* vii. *Charter. Tom. IX. p.* 316.

ſigns of an antecedent inflammation in the part, with an inflammatory pain, and the appearances of a yellow jaundice in the eyes, ſkin, urine, and fæces of the inteſtines, and with a fever evidently acute. 2. From the deficiency or want of a reſolution (§. 922.) and excretion of matter concocted (§. 923.) or of the proper curative treatment (§. 924 to 933.) 3. From the change of the ſymptoms, an abatement of the ſharpneſs of the pain, and of the conſequent pulſation or throbbing, while the jaundice ſtill continues, with ſhiverings that are vague or unperiodical. 4. From the inflammation having been none of the moſt violent, and not longer than of three days continuance.

When we know for certain that an inflammatory hepatitis has once preceded, there can be then no great difficulty in forming a diagnoſis as to the ending of ſuch an inflammation into a ſuppuration.

1.] This number includes the anamneſtic or *commemorative* ſigns, which recal back to the phyſician's knowledge a paſt inflammation; but of theſe ſigns we before treated.

2.] For by theſe defects we know the inflammatory or obſtructing viſcid ſtill remains in its primitive lodgments.

3.] Concerning theſe ſigns, which uſually attend inflammations fixed in the interior parts of the body tending to ſuppuration; and of the ſhiverings which, not being periodical, join the ſuppuration; we before treated at §. 834, where we conſidered the like termination of a peripneumony.

4.] For if the inflammation be of the moſt violent kind, and joined with the worſt ſymptoms, we may then rather expect a fatal gangrene, or a malignant putrefaction, than a ſuppuration. But when all the ſigns of an inflammation have continued above three days, without any appearance of a reſolution, or concoction

coction and excretion of the matter of the diſtemper, the pulpy veſſels of ſo tender a part as the liver, ſtuffed with impervious and inflammatory blood, cannot ſuſtain the vital impulſe of the circulation, now increaſed by a fever; but a rupture of the vaſcules, and an effuſion of their contents, will enſue; from whence matter is then formed, as we before explained it in the comment to §. 387.

§. 935. THAT a ſuppuration in the liver is already *formed* we know, 1. By the preceding ſigns (§. 934.) having been obſerved. 2. From a ſwelling in the part affected. 3. From the alteration of the ſymptoms; a heavineſs, or dull ſenſe of uneaſineſs, being now in the part inſtead of a pain, while the jaundice ſtill continues. 4. From the great weakneſs of the patient, with an hectic fever, and great thirſt.

1.] This is ſelf-apparent.

2.] We know well, from anatomy, how large a ſpace of the abdomen is taken up by the liver, and that therefore ſuch a ſwelling may point or ſhew itſelf in divers quarters of the hypochondrium. For unleſs ſuch an abſceſs of the liver ſhews itſelf outwardly, it is not eaſily diſcoverable to the ſenſes; but if it lies within the concave part of the liver, and without being of a conſiderable bulk, every one muſt well know the difficulty of diſtinguiſhing ſuch a tumour outwardly.

Moreover, it is poſſible that the gall-bladder, diſtended with bile, and projecting its bottom below the margins of the falſe ribs, may lead the obſerver to miſtake it for an abſceſs. In the year 1732, I opened the body of a poor woman who had been long afflicted with a jaundice; and, for the two laſt months of her life, had been able to bear no food upon her ſtomach, ſo that ſhe died waſted by a ſlow maraſmus or conſumption of the habit. Upon viewing the body before it was opened, the ſkin appeared every

where yellow, and the fat entirely exhauſted, whilſt in the right ilium or flank a ſoft tumour ſhewed itſelf, extending from the lower margin of the falſe ribs down to the criſta or ſpine of the os ilii; and as ſhe had long before death complained of a ſtubborn pain felt through the whole hypochondrium and ilium of the right ſide, I muſt confeſs I ſuſpected that a large vomica or abſceſs of the liver might here conceal itſelf; but the body being opened ſhewed the following appearances.

The ſtomach was very large, and diſtended with a flatulent matter; and, hanging pendulous from its two orifices, it deſcended ſo low, that the bottom of the ſtomach came within three fingers-breadth of the os pubis. The omentum and colon, annexed to the bottom of the ſtomach, were thruſt backward ſtill lower. The liver ſhewed itſelf of a bluiſh colour, hard and juiceleſs, projecting beyond the margin of the right falſe ribs: yet no vomica was found in the liver; only the branches of the vena portarum diſperſed through it were very much enlarged or diſtended, as were alſo the veins of the omentum, meſentery, and inteſtines, after the manner of varices, and were very turgid with blood, while the reſt of the body appeared almoſt bloodleſs. Now this tumour, which had ſhewed itſelf in the right ilium, was the bottom of the gall-bladder enlarged by its contained liquid, and extended as low as the right os ilium. The gall-bladder contained more than a pound of a limpid and inodorous liquor, a little inclined to a greeniſh colour, and of a ſaltiſh taſte; together with which were a great number of ſtones, of various ſizes and figures, which appeared outwardly to have a white cruſt of an harder conſiſtence, which being broken contained a much ſofter and very yellow ſubſtance in its middle.

I have ſince read[g], that faithful obſervations have ſhewn, that the gall-bladder, thus filled and diſtended, has often occaſioned a tumour that has been miſtaken for an abſceſs of the liver. The celebrated M. Petit confeſſes, that, in a conſultation among many other

g Memoires de l'Academ. Royale de Chirurgie, Tom. I. p. 155, &c.

other phyſicians and ſurgeons, ſuch a tumour of the gall-bladder was unanimouſly agreed to be an abſceſs of the liver, the opening of which was aſſigned to be his province. But having cut thro' the integuments, this incomparable ſurgeon perceived the tumour ſubſide or fall back, which brought to mind a like caſe before obſerved; and therefore he went no further on with the inciſion, but predicted that the bile would ſoon come away by ſtool, which had lain impriſoned in the gall-bladder. The apparatus of dreſſings had not been long applied to the patient's wound, but there was a ſtool which brought away a great quantity of green bile; and, in a few days after, health was reſtored. There are many more obſervations of the like kind upon record.

The principal diagnoſtic ſigns, by which a tumour of the gall-bladder may be diſtinguiſhed from an abſceſs of the liver, are, that the pain in the ſuppuration is throbbing or with a pulſation, attended with unſettled ſhiverings that are both frequent and hold for ſome time; that the tumour of an abſceſs has not ſo uniform or circumſcribed a figure, nor is there in it at firſt ſuch an apparent or eaſy fluctuation, which is moſt ſenſibly to be perceived only in the center of the tumour, from whence all the circumference makes a harder reſiſtance [h]. But it is obvious enough, that the difficulty of diſtinguiſhing theſe tumours, is only when they occupy that region of the liver wherein the gall-bladder is placed.

3.] Upon this head you may conſult what was before ſaid on the change of the ſymptoms which attend while an inflammation is changing into an abſceſs, as at §. 387, and §. 405.

4.] It was before remarked, at §. 661, where we treated of Weakneſs in Fevers, that ſometimes a very ſudden and great feebleneſs follows when any corrupt matter is lodged about the precordia. But ſince in the preſent malady (ſee §. 918.) there is always danger of a putrefaction, and laudable matter being very rarely produced in this affected part (ſee §. 933.) the reaſon

[h] Ibid. p. 161.

is from thence evident, why a great weakneſs uſually attends an abſceſs of the liver. But concerning the hectical fever, which uſually accompanies all internal ſuppurations, we treated before at §. 635. Now, ſince it was before proved (at §. 836.) that a bilious or oily acrimony, with putrid excrements, lodged in the firſt paſſages, create a febrile thirſt, the reaſon is very evident why there is ſometimes ſuch a violent thirſt in this diſtemper as no liquor can extinguiſh, of which practical obſervations aſſure us. Upon this account alſo the appetite to food is, at the ſame time, commonly quite deſtroyed. In a perſon who had an abſceſs formed in the liver from a violent outward contuſion, there was ſo great a loathing to food, that, for want of nouriſhment, the patient was in the ſpace of fifteen days wholly emaciated [1].

§. 936. THE conſequence of ſuch an abſceſs is, that it either, 1. Eats up the whole body of the liver; or, 2. Breaks open into the capacity of the abdomen, and there pours out its corrupted matter; or, 3. Makes a way thro' the bilious paſſages into the inteſtines; or, 4. Soaks through the vena cava into the whole blood; or, 5. Riſing up into a ſwelling, it grows to the peritonæum, where, appearing to the ſight, it breaks, or forms an outward abſceſs of the liver.

We come now to the different events of an abſceſs formed in the liver.

1.] It was before proved, §. 406, in treating on an Abſceſs, that matter left in a part cloſe confined, continually augments, and goes on to conſume or eat through the parts in contact; which will be ſtill true in a much greater degree in the liver, that is of ſo ſoft and friable a ſubſtance. And even if the matter be in all reſpects good or laudable, it may thus conſume the ſub-

1 La Motte Traite Complet de Chirurg. Tom. I. p. 318.

ſubſtance of the liver, as Diemerbroek[k] aſſures us by obſervation: for in a deceaſed body he found the liver of an immenſe bulk; and although it ſeemed outwardly of a good colour, and ſound in ſubſtance, he took out from it eleven ordinary pounds of white concocted matter that had no fetid ſmell. More inſtances of this kind may be ſeen in Bonetus[l].

2.] This conſequence follows when the abſceſs breaks open, either by the quantity of the matter, or by the acrimony of it, acquired by long ſtanding, and eating through the including membranes.

3.] From the known ſtructure of the liver, it is very evident, that, the extremities of the bilious ducts being eroded, the purulent matter may flow into the hepatic duct, and from thence paſs into the inteſtines. Such a termination of a ſuppurated hepatitis ſeems to have been remarked by Hippocrates, when he ſays, *Thoſe who feel a pain about their liver, anguiſh about the heart or ſtomach, drowſineſs, ſhiverings, with diſturbed bowels or ſtools, and loathing of the foods, ſuch fall away in their body, melt in profuſe ſweats, and have purulent diſcharges by ſtools*[m].

4.] And that the matter may alſo this way paſs from the ſuppurated liver into the blood, is plain enough; but when it is once intermixed with the blood, it there produces all the bad conſequences concerning which we ſhall treat at §. 941. Perhaps, likewiſe, it may be depoſited, by metaſtaſis or tranſlation, upon other parts of the body; and with various effects, according to the difference of the part which it occupies. The following paſſage of Hippocrates ſeems to point out ſomething of this kind: [n] *In thoſe who have a jaundice, with a difficult, or deep, and quick breathing, cold chills joined with ſevere heats, and a hardneſs in the hypochondria;*

[k] Anatom. lib. i. cap. 14. p. 65.

[l] Anatom. Pract. lib. iii. ſect. 17. Tom. II. p. 295.

[m] Qui circa hepar dolent, cardialgici, ſoporoſi, rigentes, alvo turbata, extenuati, cibos faſtidientes, multis ſudoribus diffluentes, purulenta per alvum dejiciunt. *Coac. Prænot.* nº 448. *Charter. Tom. VIII. p.* 878.

[n] Quibus magnum et crebrum ſpiritum ducentibus icteri, et febres acutæ cum duris hypochondriis refrigeratæ fuerint, num his abſceſſus magni circa aures excitantur? *Prædict. lib.* i. nº 166. *Charter. Tom. VIII. p.* 806.

chondria; may not large abſceſſes be excited in theſe below the ears? But that not much relief is to be from thence expected, may appear from the paſſages cited at §. 840; and from the following: *An abſceſs formed under the ears, from a lingering diſorder in the hypochondrium, takes off the patient* [o].

5.] That inflamed parts adjacent often grow one to another, was ſhewn before (at §. 843.): So the liver may in like manner grow to the contiguous peritonæum, upon which it preſſes; and by that means the patient may have the abſceſs point fortunately outwards, ſo as to allow an opening, and a diſcharge of the collected matter. But then ſuch a coheſion may take place throughout the whole ſurface of the liver, that lies contiguous with the peritonæum; and yet it will not be in all parts equally eaſy for the hand of the ſurgeon to procure an opening. For if the gibbous part of the liver ſhall grow to the peritonæum that lines the diaphragm, the collected matter may paſs from the liver into the capacity of the breaſt, or even into the lungs themſelves, and be thrown out by purulent ſpittings; as Stalpart Vander Wiel [p] obſerved in a man, who died of a ſuppuration in the liver: for he was ſurpriſed to find a purulent ſpitting, without any ſigns of the lungs themſelves being affected, and while all the ſymptoms ſhewed the liver to be the ſeat of the diſorder. After the death of this man, he ſaw that a vomica, or abſceſs of the liver, was grown to the right ſide of the diaphragm, to which the lungs alſo cohered in the ſame place; whence the matter had a direct paſſage from the liver into the lungs, and was evacuated by ſpittings.

§. 937. WHEN the liver itſelf is conſumed by the abſceſs, the patient then languiſhes for a long time under a ſlow icteritious conſumption, with a continual ſlight fever, intolerable thirſt, great weakneſs, inexpreſſible anguiſh,

[o] Ex hypochondria diuturno (diu affecto vel tumente) abſceſſus circa aurem accidit. *Coac. Prænot.* nº 293. *Charter. Tom. VIII. p.* 868.

[p] Obſervat. Rarior. Cent. I. nº 46, p. 202.

anguiſh, urine almoſt of a black colour, a tympany or flatulent diſtenſion of the belly, and a flux of moſt fetid and corrupt matter in the ſtools, till at length death puts an end to the lingering conflict.

The bad ſymptoms which attend while the liver is waſting by a purulent abſceſs or vomica, proceed partly from the return of matter which is abſorbed, and cauſes a purulent cacochymia of the blood; and in part from the hindrance of thoſe functions which depend upon a healthy ſtate of this important viſcus: for here the quantity of collected matter is every day increaſed, from whence ſometimes it has been found amounting in the liver to an incredible meaſure; and at the ſame time, by diſtorting and compreſſing the adjacent organs, it may become productive of many other evils. From hence Aretæus [q], among the other ſymptoms that attend a ſuppuration of the liver, reckons up a ſharp pain extending as high as the throat and top of the ſhoulder, becauſe the diaphragm, with the pleura connected to it, are hereby much ſtraitened. Moreover, the matter here confined in a warm place, continually ſhook by the motion of reſpiration, is thus attenuated, rendered more corroding, and gains a more eaſy abſorption into the veins. The chief ill conſequences that enſue from the matter too long remaining in a cloſe abſceſs, were before enumerated, at §. 406; and thoſe will be here found ſtill in a much worſe degree, as every thing is more diſpoſed to the worſt putrefaction (ſee §. 918.) from whence the thirſt is here more violent, as we remarked above. But a jaundice will at the ſame time be preſent with the abſceſs, if the bulk or preſſure of the laſt hinders the free exit of the cyſtic bile into the inteſtines: for otherwiſe, as we ſhewed at §. 918, a jaundice does not always accompany a vomica of the liver; and Le Motte himſelf was ſurpriſed to find a large abſceſs of the liver not attended with any jaundice [r]. But then that abſceſs aroſe from

q De Cauſis et Signis Mobor. Diuturn. lib. i. cap. 13. p. 41.
r Traite Complet de Chirurg. Tom. I. p. 327.

from an outward contuſion; and, being ſeated in the gibbous part of the liver, it pointed or enlarged itſelf externally, ſo that an opening was made for the diſcharge of its matter by inciſion, whence it behoved of courſe to make but little compreſſure upon the internal parts.

But great anguiſh here attends, from the turgid abſceſs compreſſing the adjacent blood-veſſels that are diſtributed through the liver, whereby the venous blood of the abdomen is hindered from returning through the branches of the vena portarum, from whence we proved Anguiſh to ariſe, (§. 631.)

But the urine is here very thick, and of a dark colour, almoſt inclined to a black, when there is the worſt kind of jaundice, or when that corrupted, filthy, and cadaverous matter, which flows from the waſting liver into the blood, gains itſelf a diſcharge in the urine. Even healthy urine itſelf, when it begins to put on a ſtate of putrefaction, acquires a brown colour.

But, a putrefaction being formed in the humours, air is extricated from them, which puts on a ſtate of elaſticity (ſee §. 647.) and cauſes a windy diſtenſion of the abdomen, called a *tympany*, becauſe by ſtriking the belly with one's hand it yields a ſound ſomewhat like a drum; concerning which diſtemper we ſhall treat more particularly hereafter, when we come to the chapter upon a Dropſy. It is enough here for us to obſerve, that ſuch a putrefaction ariſing in the abdominal viſcera often occaſions ſuch a ſwelling of the belly a little before death, and always carries with it the worſt preſage; and ſometimes the belly is in this manner ſo much ſwelled ſoon after death, as to be near upon burſting, as I have often obſerved in bodies deceaſed of the preſent malady. In the ſame manner we ſee the dead bodies of drowned animals, when they begin to putrefy, ſwim above the ſurface, with a puffed-up belly, which ſoon after burſting ſends forth to a wide extent a moſt dreadful and ſickly exhalation.

Finally, when the liver is at length conſumed, the putrid and filthy matter drains thence into the inteſtines; or, having been abſorbed into the blood, and occa-

occaſioned a putrid diſſolution of the healthy texture of that fluid, it flows together with that into the inteſtines by the meſeraic veſſels, and goes thence out by ſtools. Such uſually is the fatal ending of every purulent conſumption, as we ſhall ſhew hereafter at §. 1206; and this obtains in a greater degree under our preſent malady, as it is attended with a worſe putrefaction: therefore Aretæus[s] in this caſe tells us, that if an ill-ſmelling matter, almoſt like a cadaverous putrefaction, be expelled by ſtool, then a ſharp fever ariſes, all the appearances change for the worſe, the fleſh melts away, the pulſe becomes ſmall, the breathing difficult, and ſoon after death puts a period to the whole.

§. 938. BUT the caſe (§. 937.) being ſo far advanced, admits not of a cure; and will even hardly allow of any palliation or relief: here then we have another ſtate or new face of the jaundice.

So long as there is no great quantity of matter collected in the liver, and it has not long lain there, or is not much corrupted from its laudable ſtate, there is ſome reaſon to hope for the patient's recovery; but when once the whole liver is eaten up by the confined matter, corrupted or rendered more acrid, it is then very apparent there can be no expectation of overpowering ſuch a malady by any treatment.

But ſtill in diſeaſes that are incurable the phyſician has ſome buſineſs, if it be only to alleviate the ſymptoms, and render the malady more eaſily tolerable during the unhappy life of the patient. But in many caſes even this lies but very little within the power of art: for in that before us, the troubleſome anguiſh cannot be relieved, ſince it requires a free paſſage of the blood from the abdominal viſcera through the vena portarum, here impracticable; the intolerable thirſt can be extinguiſhed by no drinks, becauſe it ariſes from a ſource of corrupt matter every day increaſing

[s] Loco citato, p. 42.

creasing in malignity: in the beginning, indeed, agreeable acids in a large proportion of watery liquors, give some help; as the juice of citrons, oranges, granates, vinegar, dulcefied spirits of nitre, *&c.* but the disease being further advanced, even these prove of little service; and to fill the stomach with them by repeated drinking, will greatly increase the anguish. Here we have not one cordial that can remove the debility which springs from the melting putrefaction; and therefore death only is able to put an end to so many evils.

§. 939. IF ulcers are formed in the liver by an abscess; upon breaking, they will pour out their corruption into the capacity of the abdomen, where, to the matter that is collected, there will be daily made new additions: thus all the humours and nourishment of the body will be converted into new parcels of matter; whence all the viscera will be corrupted, so as to create a purulent ascites that resembles a tympany; and from thence, after a slow and terrible consumption, with all its symptoms, death itself follows. This kind of the jaundice, much like the former (§. 938.) is curable by no art.

That a vomica formed in the liver may, upon breaking, pour out its contained matter into the capacity of the abdomen, is not to be doubted; and there are instances of this to be seen in the sepulchretum of Bonetus[t]. But the reasons why such a disorder becomes incurable, were before declared at §. 912, 913, where we treated upon a suppuration of the diaphragm. But such a disorder arising from an abscess of the liver will much less admit of a cure, because both a greater quantity of the matter, and that of a much more corrupt nature, will be daily generated in the liver, from the much larger quantity of blood that is obliged to pass through that viscus; and thus the purulent ascites will

[t] Anatom. Pract. lib. iii. sect. 17. Tom. II. p. 295, &c.

will be daily increaſed, while all the viſcera are ſoaked and melted in the ſaid corrupted matter. But why this is followed by a tympany, we before ſhewed at §. 937. There is even great danger of a fainting and ſudden death, which may follow at the time when the abſceſs breaks open; for the branches of the portal vein in the liver, which were before compreſſed by the abſceſs, being now diſencumbered from the matter, may eaſily break open by the force of the influent blood, more eſpecially when they have been a long time macerated, and in a manner half-eaten through by a matter more than uſually acrid.

It is very evident, therefore, that this kind of the malady muſt be equally incurable with the former; and that here alſo little good can be expected from any paliative treatment.

§. 940. BUT when the ſuppurated matter and ichor, having eaten through the extremities of the biliary ducts, flows in their canals of a larger capacity, and from them into the inteſtines, it will excite, conformable to the different courſe, vomitings of matter fetid, putrid, purulent, ichorous, white, yellow, grey, brown, or even black-coloured; or elſe there will be the like evacuations by ſtool, with extreme loſs of ſtrength, under the denomination of a colliquative flux or purging, that will be ſoon fatal. Here again we have a new termination of the jaundice, the moſt of all to be dreaded.

Since the biliary pores, becoming gradually larger, do finally terminate together in one, called the *hepatic duct*, it is very apparent the purulent matter, which has once entered into them, may go on with a deſcent into the duodenum; from whence it may either flow into the ſtomach, and be diſcharged by vomiting; or it may deſcend through the whole tract of the inteſtines, and be evacuated in ſtools.

It

It is proper indeed that the purulent matter ſhould be expelled from the body: but, before it can be ſo diſcharged, a large part of the liver is often conſumed by the ſuppuration, and the part ulcerated cannot be brought to a perfect depuration, without which it can never be cloſed or healed up (ſee §. 402.); or even if that was poſſible, ſo great a portion of the liver being carried away by the violent ſuppuration, what remains of it could never be brought to anſwer the healthy functions required by that important viſcus; from whence it is very apparent there can be but ſmall hopes of ſucceeding in ſuch a caſe.

But the greater or leſs danger appears from the quantity and quality of the diſcharged matter: for if a very great quantity of matter, in other reſpects laudable, be this way evacuated of a ſudden, we conclude from it, that a very conſiderable portion of the liver is melted down by the ſuppuration, and conſequently that the danger is great in proportion. In a youth who, for want of blood-letting in the beginning of his diſtemper, fell into a purulent hepatitis or ſuppuration of the liver, the celebrated Tulpius [u] could not, by all the endeavours of art, prevent its fatality, although the matter diſcharged itſelf by ſtool, and before the cloſe of the diſtemper came up with equal freedom by the mouth. But when a fetid, ichorous, and variegated corrupt matter comes away, we apprehend the parts ulcerated to be in the very worſt condition; more eſpecially if that be followed with very great loſs of ſtrength, like that which uſually attends the colliquative purging which we obſerve in the fatal cloſe of a purulent conſumption of the lungs: for in this manner the ample ſubſtance of the liver is ſometimes ſo entirely exhauſted, after being melted into corruption, that only its including membrane has been found remaining, of a thicker ſubſtance than uſual, and reſembling a hollow bag; of which there are ſeveral examples related in Bianchi's hiſtory of this organ [w].

From

[u] Obſerv. Med. lib. ii. cap. 27. p. 141.

[w] Hiſt. Hepat. part ii. cap. 9. p. 173.

From hence Aretæus, after having admoniſhed that a ſuppuration of the liver ſometimes flows to the inteſtines, reckons up the different kinds of matter that are then evacuated by ſtool, and almoſt conſtantly with a bad event: and at the ſame time he alſo obſerves, that the liver, being ſo greatly injured by the violent ſuppuration, does not concoct the aliments; from whence ſome, after being cured of an hepatic ulcer, have yet fallen into a dropſy: But that ſuch patients have only juſt grounds to hope for a recovery, *if they digeſt their aliments well, while all the ſymptoms are abated, and a white, uniform, unacrid, and inodorous matter comes away by ſtool* [x]. For theſe ſigns demonſtrate a good ſuppuration, with a ſtrong or ſound ſtate of the viſcera ſtill remaining.

In this caſe, then, ſuch medicines will be uſeful as reſiſt all putrefaction, and gently deterge or cleanſe ulcerated parts, ſuch as we recommended at §. 924.

§. 941. BUT if the ſame purulent liquid (§. 940.) ſhall have eaten through the ends of the vena cava in the liver, ſo as to tranſuſe itſelf through that veſſel into the blood; by intermixing therewith, the moſt miſchievous ſymptoms ariſe, and prove ſpeedily fatal: ſuch as, Frequent and extraordinary faintings; extreme weakneſs; a pulſe in all reſpects bad; a diſturbance of all the functions; and ſudden death. This again makes another kind of the jaundice.

It is well known, that the lower vena cava appears in a manner to be rooted into the ſubſtance of the liver, from which paſſing out through the diaphragm it immediately goes into the right ſinus; and therefore, if a large quantity of matter is this way ſuddenly mixed with the venous blood, it is the next mo-

[x] Si omnia remittantur, pus album, leve, æquale, inodorum venter deiciat, cibaria vero concoquat. *De Cauſis et Signis Morb. Diuturn. lib.* i. *cap.* 13. *p.* 42.

ment afterwards driven thro' the ſtraits of the lungs, where it may be arreſted, ſo as to produce a ſudden ſuffocation. But if, inſtead of good matter, an acrid ichor, or putrid ſanies, ſhall thus flow into the blood, and be with that diſtributed throughout the body, it is apparent that all the functions of the body muſt together and at the ſame time be diſturbed; and that the tender veſſels of the encephalon and lungs may be eaten through by the ſaid acrid humours, from whence ſudden and unavoidable death may enſue. But if only an increaſed quantity of good chyle, ſuddenly intermixing with the blood, can excite a fever (ſee 586, no 5.); and if the critical matter of a fever, reſolved and rendered fluxile, can excite ſo many diſturbances in the body (ſee §. 587, 619.); what miſchiefs are we not to expect and fear from a corrupt ichor poured into the blood?

But when the matter collected in the liver is ſlowly or inſenſibly intermixed with the blood, before it has yet degenerated from the conditions of good matter, it may then be poſſibly waſhed out in the urine, or elſe be removed by metaſtaſis upon ſome leſs dangerous part: but then, as was ſaid at §. 936, nº 4. the obſervations of Hippocrates ſeem to perſuade us, that a ſalutary tranſlation cannot eaſily happen in this caſe. But that it may ſometimes paſs out by urine, Aretæus has admoniſhed us, when he ſays, *But if the abſceſs creeps to the internal viſcera, nature may do much more than the phyſician: for the matter then takes its courſe either to the inteſtines or to the bladder; but the paſſage to the bladder is by much the leaſt offenſive or miſchievous* [y]. And afterwards, where he treats upon a diſcharge of purulent matter by ſtool, that has been collected in the liver, he ſubjoins, *But it is beſt for the critical diſcharge to be made by urines; for the purulency may paſs this way more ſecurely, and with leſs miſchief* [z].

§. 942.

[y] Si vero ad interiora repat abſceſſus, longe medico natura præſtat: aut enim ad inteſtina, aut ad veſicam pus convertet; verum multo innocentior eſt ad veſicam via. *Ibid.*

[z] Optimum vero eſt, per urinas criſin fieri; ſecurior enim et minus noxia eſt hæc puris via. *Ibid.*

§. 942. IN this caſe (§. 491.) there is indeed no valid cure to be had; but a plentiful uſe of ſuch aliments and medicines as recruit the powers, reſiſt putrefaction, and ſupply the neceſſary moiſture, will be of ſome benefit.

From what has been ſaid it is plain, that, in the preſent circumſtances, there is the utmoſt danger of the very worſt conſequences following from the blood charged with a purulent cacochymia; but much more if the matter collected in the liver is already begun to corrupt into a putrid ſanies. The only intention of the phyſician that then remains, is to waſh out from the blood the ſaid corrupt matter, by exhibiting a large quantity of mild, diluent, and deterſive liquors; to prevent the putrefaction which is here ſo much to be feared, or at leaſt correct it as much as lies in the powers of art; and at the ſame time, by a nouriſhment the moſt mild and averſe to putrefaction, to ſupply new juices inſtead of thoſe which, being already corrupted, ought to be driven out of the body. The whey of new-milk boiled with ſorrel, the broths of veal or poultry taken with the juice of citrons or oranges, panada, rice or oat-meal gruel, and the like, in which ſome old hock or Rheniſh wine is diluted, are here preferable beyond others for this purpoſe. The mineral acid ſpirits, eſpecially thoſe from ſea-ſalt, dulcified or well united by repeated diſtillations, with thrice their weight of alcohol vini, are moſt efficacious correctors of putrefaction: in the ſame caſe alſo mineral waters are recommended, inaſmuch as they waſh and abſterge all the nervous veſſels, and carry out the matter by urine, or ſometimes by ſtool. But great weakneſs uſually accompanies this malady; and all practical phyſicians obſerve, that theſe waters, which are in other reſpects ſo ſalutary, profit not in the preſent malady, unleſs the vital powers in the patient are ſtrong enough to move and expel them. Forms of medicines, ſerviceable in the preſent malady, are propoſed in the Materia Medica at §. 944.

§. 943. BUT when the laſt kind of this malady (§. 936, n°. 5.) is obſerved to exiſt, then the tumour, properly held or ſecured, is to be opened either by ſeton, actual cautery, cauſtics, or lancet; and the wound made is to be afterwards gently eroded or enlarged to a greater depth, by ſuppuratives and eſcharotics, until it extends to the vomica or abſceſs.

In this caſe a way muſt be opened as ſoon as poſſible for the exit of the matter collected in the liver: for Aretæus well obſerves, "If the abſceſs points outward, to neglect opening it by inciſion is bad practice; for if it be thus left to itſelf, the liver is eat up by the matter, and there is nothing that can hinder it from being mortal [z]." But ſince the liver appears ſo bloody a viſcus, that the ancients made it the origin of all the veins, and the fountain or reſervoir of the blood itſelf; therefore he ſoon after adds, "But even if you make the inciſion here, it is a bad caſe: for there is danger of an hæmorrhage, which may immediately deſtroy the patient; for there is no method of reſtraining a profuſion of blood from the liver [a]." Therefore he recommends to make the inciſion by an actual cautery, that may both cut, and make an eſchar at the ſame time; for that by this method the actual cautery removes all danger of an hæmorrhage, at the inſtant the wound is made. In this caſe Hippocrates [b] alſo recommends the application of a cautery, when the liver is very much ſwelled, and points outwards. However, there ſeems to be no ſuch great danger of a fatal hæmorrhage from an inciſion that is prudently performed; for, when ſuch an abſceſs is opened, the point of the knife or lancet is lodged in a bag full of matter, by which it is kept at a diſtance far enough from any ſubjacent blood-veſſels. Beſides, obſervations teach us, that the whole ſubſtance of the viſcera is ſometimes melted down by a purulent abſceſs,

[z] De Cauſis et Signis Morb. Diuturn. lib. i. cap. 13. p. 42.
[a] Ibidem. [b] De Internis Affection. cap. 30. Charter. Tom. VII. p. 661.

abſceſs, without any conſequent hæmorrhage, although they contain very large blood-veſſels. This is apparent in pulmonary conſumptions, in which the whole ſubſtance of the lungs is often conſumed before the patients die, and at laſt they expire not with any hæmorrhage: and the celebrated Le Motte [c] informs us, he was ſurpriſed to obſerve an opened abſceſs in the liver, which diſcharged a pound and half of matter, and in which he could turn round his fiſt without any reſiſtance, to be nevertheleſs attended with no diſcharge of blood. Moreover, Aretæus [d] adviſes the actual cautery to be entered only deep enough to reach the matter, becauſe the danger of this hæmorrhage ſprings from the veſſels eaten through, or elſe injured by the knife, in the bottom of the abſceſs; and that therefore with this precuation there muſt be no danger of an hæmorrhage, ſince the cautery could not be able to reach the ſaid veſſels. Again, when eſchars are thus produced by cauteriſing, they often require many days before they can be mollified and caſt off from the living parts, which is not to be effected without the greateſt pain; and even frequently ſuch eſchars, when they are upon the point of ſeparation, require ſome aſſiſtance from the knife, when the purulent bag is not as yet opened; of which caſe an inſtance is given us in Bianchi [e], where the eſchar being deeply burnt by the potential cautery, yet required to be perforated by the knife. But ſince delays are dangerous in the preſent malady, an inciſion is evidently to be preferred to the cauſtic. But it is moſt adviſeable firſt to lay open the integuments of the abdomen by an inciſion, that the pointing part of the abſceſs may come into view, and then it may be entered by the knife without any danger of injuring the circumjacent parts.

But ſince the event of ſuch an operation is doubtful in ſo dangerous a malady, and it is from the condition only of the matter diſcharged that we can be informed whether the patient will ſurvive or not; therefore proper notice muſt be given, that, if a paſſage is

[c] Traite Complet de Chirurgie, Tom. I. p. 327. [d] Loco paulo ante citato. [e] Hiſt. Hepat. parte tertia, Tom. I. p. 368.

not ſpeedily procured for the collected matter to diſcharge itſelf from the liver, it muſt be ſhortly fatal; and yet that one cannot promiſe a certain cure, although the abſceſs be opened. But by ſuch a notice the phyſician may guard his own reputation.

§. 944. IF the abſceſs thus opened ſends out a matter that is white, uniform, unacrid, and inodorous, not tinging the ſilver probe with any ruſt or colour, there is reaſon to hope for a recovery; for it ought to be treated as an ulcer (§. 402, to 413.), while at the ſame time abſterſive or cleanſing medicines are uſed internally.

Here are recited the conditions of laudable matter, of which we treated before at §. 387, and in other places following: and from theſe we know that there is not a putrefaction, but that by a mild ſuppuration the extremities of the veſſels, ſtuffed with unpaſſable blood, are now digeſted off, from whence there may be hopes of a cure, although not without danger of failing; for, even by a laudable ſuppuration in this large viſcus, the patient may have his ſtrength exhauſted, and by degrees be waſted in a conſumption. The paſſage of Hippocrates which gives us this prognoſis, was before quoted at §. 933. But in what manner an open ulcer ought to be treated, was before declared in the chapter upon an Abſceſs, at the numbers cited in the text.

At the ſame time thoſe internal remedies will be likewiſe of uſe which we recommended at §. 942, of which there are alſo ſome forms given in the Materia Medica, under the number of the preſent aphoriſm.

§. 945. BUT if a ſanious or filthy ichor is diſcharged from the ulcer, of a yellow, brown, livid, or black colour, and of an ill or fetid ſmell, tinging the probe with a variegated colour like the rainbow, the liver will be then ſlowly eaten up by the ulcer, the patient will be waſted with

with a conſumption, and labour under ſymptoms almoſt the ſame with thoſe before-mentioned at §. 941.

For all theſe appearances of the diſcharged matter denote that it degenerates from the laudable ſtate and conditions of good or ſound pus, deſcribed in the former aphoriſm; and indeed the matter diſcharged is more malignant, as it ſhews more of theſe bad qualities, which, in the order they are here recounted, ſhew greater danger of an unhappy ending of the malady, and a greater degree of corruption. We then alſo, at the ſame time, know that the parts ulcerated muſt be in the very worſt condition, ſince they contain ſo corrupt a matter, and that frequently confined for ſo conſiderable a time.

However, there are many medical obſervations which ſhew that theſe patients ſometimes recover, even when the opened abſceſs has diſcharged other matters beſides a laudable pus. Thus, in a youth of fourteen, who, after much heating his body, waſhed his feet in cold water, a fever aroſe, which at laſt occaſioned a large abſceſs in the liver, by which his whole body was conſiderably waſted: but the abſceſs being afterwards opened, and the matter taken out, upon renewing the dreſſings conformable to the ſurgeon's apparatus, a very thick ſordes or ſort of bloody matter came out, and was found ſometimes yellow, bitter, and in all reſpects bilious, having conſtantly in it ſome little fleecy portions that manifeſtly reſembled the vaſcular parts of the liver itſelf: but leſt this matter, ſtagnating in the ulcer, ſhould be again abſorbed and returned into mixture with the blood, a ſilver cannula, perforated laterally by many ſmall holes, was by this moſt expert ſurgeon introduced into the opening of the abſceſs, that it might continually give a free exit to the collected matter; and to avoid any excoriation of the adjacent ſkin from the ſaid matter, he covered it with thin lead. Thus the ſlow fever, which had hitherto attended, leſſened daily; and the body by degrees recovered its former ſtrength and bulk; and in a little

little time the ulcer was conſolidated [f]. But then it is obſerved, in this wonderful caſe, that the vomica was ſeated in the anterior and convex region of the liver; nor are there here thoſe ſigns mentioned which denote that a great degree of putrefaction attended.

Sometimes again a different liquid from that of matter has been taken out from ſuch an abſceſs, and yet the patient has ſurvived: for thus Lyſerus, in an epiſtle to the celebrated Bartholin [g], remarks, that in a ſuppuration of the liver an opening was made for the matter, by the uſe of an actual cautery, which procured a plentiful diſcharge of it, and the flux remained copious ſeveral days after. But the ſurgeon having urged his probe deeply into the bottom of the ulcer, there flowed out a quantity of yellow water amounting to above three pounds; but the watery flux having ceaſed, matter again was diſcharged, and continued to flow for above a year, only in a moderate quantity, and a fiſtula was here left for its excluſion through the right hypochondrium.

From hence therefore it is apparent, that there is always great danger when the diſcharged matter degenerates from the ſtate of laudable pus; but that we can only preſage the caſe fatal when a putrefied ſanies is expelled. From hence too Hippocrates, in a paſſage lately cited from him at §. 933, and in his Coan Preſages, pronounces, *But when a filthy matter, like the lees of oil, flows out from a cauteriſed abſceſs of the liver, the caſe is fatal* [h]. For the dark or blackiſh-coloured and greaſy filth, that falls to the bottom of oil preſſed from olives, is by the Greeks called αμοργη, *amurca*, lees or dregs, as appears from Erotian's dictionary [i], who has collected and explained moſt of the terms of Hippocrates. But ſuch a flux of fecal or dreg-like matter, from an opened abſceſs of the liver, denotes that the ſubſtance of that viſcus is melting down in a putrefaction.

§. 946.

[f] Acad. des Sciences, 1730. Hiſt. p. 53.

[g] Epiſt. Thom. Barthol. Tom. II. p. 639.

[h] Quibus hepate inuſto velut amurca exit, lethale. N° 451. *Charter. Tom. VIII. p.* 878.

[i] Charter. Tom. II. p. 110.

§. 946. BUT again; If, after an inflammation of the liver, you perceive the ſymptoms enumerated at §. 392, a ſchirrhus is then formed in this part; which of courſe, by its bulk, hardneſs, increaſe, and ſituation, will injure the parts or viſcera that are adjacent; from whence again almoſt the ſame kind of complaints as §. 918. will be, but more ſlowly, produced: and here the malady is not affected by any emollient reſolvents; and as for violent or acrid ones, they change it into a horrid cancer, (§. 492.); the terrible effects of which may be underſtood from comparing the particulars of §. 499. with the nature of this part affected: but the principal or moſt conſpicuous effect of ſuch a ſchirrhus of the liver, is a perpetual jaundice.

How, and from what cauſes, an inflammation may turn into a ſchirrhus, was before declared at §. 392; and in the inflammatory maladies hitherto treated of it has been ſhewn, that ſuch hard and indolent tumours ſometimes are left behind, as by their bulk and preſſure prove very troubleſome to the adjacent veſſels and viſcera, as well as injurious to the functions of the part itſelf in which they reſide. But that ſuch ſchirrhous indurations are often to be found in the liver, I can vouch from my own obſervations in deceaſed bodies; and the ſame is teſtified upon the undoubted credit of others. It was before ſaid upon another occaſion (ſee §. 485.), that an atrabiliary matter of the blood and of the bile often gave birth to a ſchirrhus; and that this laſt often made the cauſe of an hepatitis, or inflamed liver, (ſee §. 916.) To this alſo concurs the ſlower and weaker courſe of the blood, moved thro' the liver: for which reaſon the motion of a fever being too ſuddenly extinguiſhed, either ſpontaneouſly or by blood-letting, and the uſe of ſuch other remedies as abate the velocity of the circulation, before the ſaid inflammatory viſcid has been duly reſolved, or elſe caſt off from the body by a laudable ſuppuration; ſuch a

ſchirrhous

ſchirrhous hardneſs may in that caſe remain in the li ver, as will for the future give birth to many ſtubbor and chronical maladies. This termination of an hepa titis has been well remarked by Aretæus where he ſays *But if an inflammation of the liver comes not to a ſuppu ration, no one can doubt but that by ſettling into an har tumour it will at length make a confirmed ſchirrhus; i which caſe there is no conſtant pain, or if any ſometime attends, it is only obſcure or dull* [j]. And after havin reckoned up the various complaints that accompany ſchirrhus of the liver, or follow after it, he ſays *But theſe complaints cloſe in a dropſy* [k]. But that ſchirrhus of the liver is often found in the bodies o thoſe who die of dropſies, is a truth that will be here after ſhewn in our chapter upon a dropſy at §. 1229. Sometimes the liver being rendered ſchirrhous acquire alſo an immenſe bulk at the ſame time; of which Bo netus [l] gives an inſtance in a woman, who, having im prudently healed up an ulcer that had long been kep open under the right arm-pit, began to have a pai and ſwelling about the liver, which by degrees increa ſing brought on a jaundice; and after many remedie tried without effect, the ſwelling ſo much increaſed that it obliged her to ſit in a chair day and night wit her right ſide inclined downward to the earth. In th body of this woman after death, the liver was foun wholly ſchirrhous, and weighed fourteen ordinar pounds by the ſcales: in the ſame place we are furniſh ed with other inſtances of the like kind. I have my ſelf ſometimes found the whole liver juiceleſs in de ceaſed bodies, with a toughneſs almoſt like that of lea ther; but very much contracted, or greatly diminiſh ed in its bulk. A wonderful appearance of the live was found in the body of a dropſical woman, by th very learned phyſician Dr. Cornelius Henry Velſe [m]

for

j Verum ſi a phlegmone hepar non ſuppuratur, nemini dubium fuerit tumorem durum ſubſidentem in ſcirrhum mutari ac ſtabiliri; quand continuus dolor non infeſtat, quumque adeſt, obſcurus ſentitur. *D Cauſis et Signis Morb. Diuturn. lib.* i. *cap.* 13. *p.* 42.

k Malorum autem colophon hydrops. *Ibid.*

l Anat. Pract. lib. iii. ſect. 16. obſ. 3. Tom. II. p. 280.

m In Diſſertatione Inaugurali de mutuo ingreſſu inteſtinor. et aliis ma chinæ humanæ extraordinariis. Lugd. Batav. 1742, p. 43.

or the whole liver, being of ſmall bulk, was perfectly ard or rigid; and throughout the gibbous and concave urface of it was beſet with rough and ſolid knots or ubercles, contiguous almoſt one to the other, each of hich ariſing up from a broad baſis, in the ſubſtance f the liver, at laſt ended in a round and obtuſe point r tip; but neither vomica nor ſchirrhus was found in he more inward ſubſtance of the liver. Nor did this nhappy woman complain of any uneaſineſs in her ight hypochondrium, but only about the præcordia or omach; and the incomparable author of the remark onfeſſes, that in her life-time there was no ſenſible welling or hardneſs that could be perceived in the ight hypochondrium.

But it is eaſily apparent, that ſuch ſchirrhous tuours do, by compreſſing the adjacent veſſels, occaon almoſt the ſame complaints that were before enuerated (at §. 918.), except that they will all advance r come on more ſlowly; becauſe, as an inflammaory ſwelling very ſwiftly increaſes, ſo that of a ſchirhus commonly grows up very ſlowly. But ſchirrhous ndurations are oftener to be found in the liver than commonly believed; more eſpecially when autumal fevers, that ſpread epidemically after very hot ummers, are too ſuddenly ſuppreſſed by the Peruian cortex; for then an icteritious colour uſually reains in the eyes, and an oppreſſing weight is felt bout the præcordia, which much increaſes after the omach is filled with a meal. But if in this caſe the atient be not duly ſuccoured by a ſpeedy uſe of the oſt powerful reſolvents, as (at §. 924.) we before reommended, taken in large quantities, and with a ng continuance, an incurable ſchirrhus will ever after emain; and then ſuch patients languiſh for a long me with a waxen or jaundice like countenance, and ften expire at laſt with a dropſy: but when ſuch a chirrhus has been long confirmed, and then ſhall be rritated either from a fever, violent or ſhocking meicines, ſtrong vomits or purgatives, and the like, it y theſe means degenerates into a cancer, as we ſhewd before in our hiſtory of a Schirrhus. If now you com-

compare what was said upon the dreadful effects of an ulcerating cancer (at §. 499.), eating through all around it, with the liver itself in particular as the present seat of such a malady, it will appear plainly enough with how many tortures death must be inevitably expected. Sometimes it has been observed, that, after a long-continued jaundice, most tormenting pains will invade the belly, and much blood will discharge itself both upward and downward; whence a fainting, and death, often ensue: but in such a case the blood-vessels of the hepatic system seem very probably to be eaten through by an acrid or cancerous ichor. Bonetus[n] relates a case of this kind, taken from Ballonius, in which the liver was after death found thus affected by a cancer.

But for what reasons, and under what circumstances, a perpetual jaundice may accompany a schirrhus of the liver, we have before explained at §. 918.

§. 947. FROM what has been said, then, it appears, that such a schirrhous state of the liver, being once known by its proper signs (§. 946.), requires to be treated with the utmost gentleness, and is hardly ever to be cured.

When we treated on a Schirrhus, the extreme difficulty of its cure appeared, even when seated in parts accessible to the hands, and to which epithems, frictions, fumigations, and the like topical applications might be immediately applied: and it there also appeared with how much precaution one ought to determine whether any curative treatment of it should be undertaken; since there is so much danger left: schirrhus, especially one of long standing, may degenerate into a cancer. The utmost prudence is therefore apparently necessary in the treatment of such maladies, in which that method only can be safe which prescribes the most emollient resolvents, that exert no acrimony, nor increase the velocity of the circulating juices.

[n] Anat. Pract. lib. iii. sect. 17. obs. 5. Tom. II. p. 299.

juices, as we before declared. But it alſo appears at the ſame time, that by ſuch remedies an incipient ſchirrhus in the viſcera may be ſubdued, when they can by no means reſolve a ſcirrhus of the liver that has almoſt acquired a ſtony hardneſs: and from hence it is that Galen pronounces, *We have indeed often cured a ſchirrhus of the liver that is incipient: but one that is inveterate or confirmed, I have never been able to cure myſelf, nor did I ever know it to have been cured by another; for a dropſy has always followed when there has been ſuch a confirmed ſchirrhus of the liver: but the generality of ſuch patients linger a conſiderable time, before they die; although I have known ſome taken off in a ſhort time, when they have had a great flux or purging from the bowels* o. But it ought here to be remarked, that *Galen* does not not reckon the inveteracy of a ſchirrhus from the number of years of its continuance, ſince the text even ſays, (εκταθεντα δ' εις πλειυς ημερας,) *if it has been protracted for ſeveral days*; which imports no ſuch long ſpace of time. But it ſeems very probable, thoſe who are mentioned to have been quickly carried off by this malady were ſuch as, from the degeneration of a ſchirrhus into a cancer, had a drain of the acrimonious ichor into their inteſtines, productive of an incorrigible flux or over-purging from the bowels, that is ſoon fatal.

§. 948. BUT if a ſlight inflammation of this kind ſhall occupy only a very ſmall part in the liver, it may even then give birth to a little ſtone, a ſchirrhous knot, or a ſmall abſceſs, or puſtule: which of themſelves can do no great miſchief; but, with a conſequent fever, they may be productive of numerous evils.

o Hepatis autem ſcirrhum, incipientem quidem, ſæpe curavimus; veteratum vero neque ipſe ſanare potui, neque alium novi qui poſſet. Omnes enim ita affectos omnino ſequitur hydrops. Plurimi autem longiori temporis ſpatio intereunt; nonnullos vero brevi perire vidi, quibus ventus multa dejiciebat. *Lib.* ii. *Method. Medend. ad Glaucon. cap.* 7, *Charter. Tom. X. p.* 380.

We are taught by anatomy, and more eſpecially by the *Ruyſchian* art of injection, that the ſubſtance of the viſcera, which the ancients eſteemed an unorganized pulp, is a compages of ſmall veſſels. Further, in parts of the human body that have been thus prepared by injection, we are enabled to perceive, by the help of microſcopes, that the veſſels, ſending out little branches on all ſides, communicate one with another, by mutual openings, which render a ſmall obſtruction formed in any part not immediately able to intercept the whole vital conflux of juices to a part affected, but it will in ſome meaſure be ſupplied from the anaſtomoſing communications of other branches from veſſels that are not obſtructed. Now this mechaniſm was neceſſary, to prevent the actions of the viſcera from being immediately and greatly injured by any ſlight obſtruction. If therefore ſuch a little inflammation ſhall occupy but a ſmall part in the liver, it can produce no great miſchief; and is therefore either not known, or neglected in the cure; although it goes on to produce the ſame conſequences in the part affected, only in a leſs degree, which we before obſerved from a violent inflammation of the whole liver. Such a little phlegmon may, therefore, leave behind it a ſmall ſcirrhus; or ſometimes a little ſtone, whenever the humours ſecreted in the liver, or the blood itſelf that contains the ſaid humour to be ſeparated from the portal branches, are much inclined to ſuch a ſtony concretion, as we obſerved at §. 916. In turning over the writings of thoſe who have made it their buſineſs to collect and ſearch after the cauſes of diſeaſes in dead bodies, we obſerve, that they have frequently found, both in the liver and in the other viſcera, ſuch like remains of former diſeaſes, that yet afforded no ſigns of their exiſtence in the living perſon. The like has been alſo obſerved times without number, by anatomical profeſſors, who have annually diſſected the bodies of executed perſons for academical uſes. But, in the mean time, it is nevertheleſs true that ſuch a hard tubercle, though ſmall, will yet compreſs, and in ſome meaſure injure, the contiguous veſſels

veſſels; but with ſuch effects as will be not very ſenſible ſo long as the circulation continues ſedate: but when the humours, more violently agitated by a fever, cauſe a greater diſtenſion of the veſſels, an inflammation will then eaſily form itſelf round the ſurface of ſuch a tubercle, and ſpread through the parts adjacent, from whence many bad conſequences enſue. In like manner we obſerve a ſcirrhus, in the breaſts of thoſe perſons who have good juices, will often lie dormant for many years, without giving uneaſineſs, or increaſing its bulk; but when a fever, excited from ſome other cauſe, moves the blood with a greater celerity, the ſcirrhus is ſuddenly enlarged, and ſoon degenerates into a cancer. It is thus therefore apparent enough, that for the ſame reaſons the like cauſes may in the liver be productive of many miſchiefs, however ſlight they may appear in the beginning.

§. 949. LASTLY, an inflammation of the liver terminates ſuddenly in death, if the cauſes of the inflammation are ſo violent as to deny all paſſage to the humours thro' the whole liver, while a very intenſe fever is urgent at the ſame time: for then the whole liver being conſtringed in its vaſcular extremities, and over-dilated in its larger blood-veſſels, obeys no part of its uſual function; whereupon a great and ſudden jaundice enſues, with a rupture of the veſſels, an extravaſation of the blood and bile, and a direct or ſpeedy death of the patient. That this laſt way of terminating an hepatitis is about to follow, we learn, 1. By a knowledge of the violence of the diſtemper in the liver; and, 2. By an exceſſive and ſudden loſs of all the ſtrength or powers of the body: But that it is already effected, we are taught from vomitings and purgings of blood, with bile, and fæces that appear like the lees of wine or oil, green, black, and intolerably

lerably fetid or cadaverous; violent and perpetual hickups; a moſt intenſe fever; unextinguiſhable thirſt; and a ſudden paleneſs of the whole body.

We have hitherto conſidered the various endings of an hepatitis, either in health by a mild reſolution (§. 922.) or by a concoction and excretion of the matter of the diſtemper (§. 923.); or by a change into other diſeaſes, either in forming a ſuppuration (§. 933.) or in leaving a ſcirrhus (§. 946.) It now remains that we conſider how the worſt or moſt violent kind of the hepatitis may terminate ſometimes in death, and that very ſuddenly: for thus we may be enabled to apply directly the moſt powerful relief; or, if the malady exceeds all the powers of art, the phyſician may at leaſt be able, by the obſerved ſigns, to know and foretel the ſpeedy fatality that is about to happen, and thereby keep his character clear of imputations. For this reaſon Hippocrates [p] (as formerly obſerved) adviſes phyſicians to apply themſelves diligently to form the prognoſes of diſeaſes, ſince no one can pretend to cure all patients; "For that this will deſervedly make all perſons admire him, and eſteem him a great phyſician; "and by this means likewiſe he will be much better "able to preſerve thoſe that are recoverable, having "for ſome time beforehand premeditated upon all the "circumſtances; and in the worſt events he will keep "clear of all blame, if he foreſees and foretels which "patients will expire, and which of them will recover."

Therefore, when the inflammatory matter, impacted into the ſtraits of the ſmaller veſſels, has the utmoſt tenacity, and abounds enough to block up all the ſaid veſſels, while at the ſame time the blood is violently urged into the obſtructed parts by a fever, the whole liver becomes ſwelled, and all its biliferous ducts are ſo compreſſed as to intercept the paſſage of the gall to the inteſtines, from whence a jaundice-colour is ſuddenly transfuſed all over the body. But ſince the liver is a part ſo tender or friable, compoſed of veſſels that

[p] In Prognoſtic. initio. Charter. Tom. VIII. p. 583, &c.

that are ſoft like a pulp, thoſe veſſels, being over-diſtended, cannot long bear the violence without burſting; whereupon all the humours extravaſate into the capacity of the abdomen, and ſudden death enſues. And again; as in this caſe there is a ſtop to all the vital influx by the arteries, and efflux by the veins, a preſent gangrene is induced (§. 419.), which ſoon corrupts all before it. But ſuch a violent and ſuddenly fatal hepatitis very rarely happens, unleſs the inflammatory viſcid, being fuſed and put in motion by a fever, is ſuddenly thrown upon the liver, ſo as to ſtop up all its vaſcular compages at one and the ſame time. Thus Hippocrates [q] obſerves, that ſometimes ſo ſevere an hepatitis follows from a conflux of atra-bilis upon the liver, that the patient ſuddenly expires of it. Such a ſudden rupture of the veſſels, and profuſe hæmorrhage, in an hepatitis, ſeems likewiſe to have been feared by Aretæus; for thus he expreſſes himſelf: *Bloody fluxes are more profuſe from the liver than from any of the other viſcera; for it is the root of the veins; nor is it ſo unuſual for it to be invaded by a violent inflammation; nor can a phlegmon ariſe in a part of greater conſequence, ſince it ſnatches a patient out of his life before he is aware of it* [r]. And ſoon after he ſubjoins: *But if a phlegmon ariſes in the portæ or gates of the liver, from a more violent cauſe, as a blow or contuſion, a perpetual corruption of the aliments either from gluttony or their vitious quality, or from drunkenneſs, or intenſe cold, the malady is very ſpeedily fatal* [s]. For thus if the fat of the omentum be profuſely melted down, and violently impelled into the liver, by the ſultry heats of ſummer, or violent exerciſes of body, being unable to gain a free paſſage through the leaſt veſſels, it will obſtruct the final ſtraits of the vena portarum, where,

[q] De internis Affectionibus, cap. 29. Charter. Tom. VII. p. 659.

[r] Sanguinis utique profluvia ex hepate omnium maxima fiunt: venarum enim radicatio (eſt): neque in ipſo valida phlegmone haud ita frequenter, neque in partibus magis præcipius oritur, homo enim vita excedens prævenit. *De Cauſis et Signis Morb. Acut. lib.* ii. *cap.* 7. *p.* 19.

[s] Si vero a majori cauſa, plaga vel continuis corruptionibus multorum vitioſorumque ciborum, ebrietate, vehementi refrigeratione, phlegmone in portis jecoris fiat, celerrima pernicies. *Ibid.*

by a rupture of the veſſels, it may cauſe ſudden death. This fatal event is ſometimes experienced in the horned cattle that are over-fed for fattening in the richeſt meadows, in the ſultry heats of ſummer; for they often begin to loſe their ſtrength, with a ſudden oppreſſion or anguiſh; then turn giddy, with a yellowneſs of the eyes; and ſoon after, falling down dead, their belly has been found full of blood. In horſes likewiſe, more eſpecially of the fatter kind, which after long idleneſs are put to ſudden and violent running, the ſame accident does frequently happen; and in like manner extravaſated blood, and ſometimes a quantity of oily or melted fat, amounting to ſeveral pounds, have been found in the capacity of the belly. But the ſigns of ſuch a fatal ending of an hepatitis are,

1.] As for example, if a perſon that is atrabiliary, or very fat, undergoes much exerciſe in the hotteſt ſeaſon of the year, by which the long ſtagnant and collected humours are put into motion; or if ſuch a perſon, after violent exerciſe of body, bathes ſuddenly in cold water; we then know that ſuch cauſes have preceded as may give a reaſonable occaſion for us to fear ſuch a malady. If then there follows after theſe a ſudden and great anguiſh, from the blood being refuſed a paſſage through the vena portarum in the liver (ſee §. 631.), while the right hypochondrium is raiſed into a ſwelling, the eyes begin to turn yellow, and a violent fever ariſes, we then know that this moſt dangerous malady is already begun.

2.] The ſigns here enumerated teach us, that either the blood-veſſels, being ruptured, extravaſate a great quantity of blood, whereupon that very ſudden and exceſſive loſs of all the ſtrength is obſerved, with a great paleneſs ſpread haſtily through the countenance; or elſe they denote that a ſpreading gangrene is now corrupting all around it. Sometimes the veſſels of the liver, being ruptured, pour out their blood into the capacity of the abdomen; at other times the ſame blood is detached from them into the ſtomach and inteſtines, and is from thence expelled either upward or downward. A remarkable caſe of this

this kind is related by Veſalius[s], in a celebrated counſellor at law, who had long laboured under a lingering hypochondriacal malady: who having inquired minutely of Veſalius concerning the ſtate of his health for the ſpace of the year that was paſt, was told that it was an obſtruction about his liver; and made a promiſe to that profeſſor to come the next day to his anatomical demonſtrations, that were to be upon the viſcera of the abdomen, that he might have a better idea of his own malady: but within a few hours, on the ſame day, at ſupper, he ſuddenly complained of a wonderful weakneſs of body, with a difficulty of breathing, and ſoon after expired. Veſalius the next day, inſpecting the body of the deceaſed to diſcover the cauſe of ſo ſudden a death, found that all the blood of the body, as yet warm, was poured into the capacity of the peritonæum, from a rupture in the trunk of the vena portarum; the liver was all white, and beſet with tubercles; the whole anterior and left ſides of the liver were alſo hardened like a ſtone; but the back part of it, where the vena cava coheres with it, appeared ſoft and corrupted. Now if at length the rupture of the veſſels may be occaſioned in ſuch chronical or ſlow diſeaſes of the liver, is there not much more reaſon to fear the ſame effect from a ſudden infarction of the liver throughout its whole ſubſtance, while the blood is violently urged into the obſtructed veſſels by an acute fever? Hippocrates[t], in his Epidemics, relates ſuch a caſe: For Chartadus had an ardent fever, with a plentiful diſcharge of bile both upward and downward, while a round ſwelling was obſerved about the ſpleen, affording a ſign that the paſſage of the blood through the liver from the ſpleen was impeded. Upon the ſame day blood was diſcharged by ſtools to the quantity of a gallon, at ſeveral times: there was alſo a ſecond, and a third diſcharge of the ſame kind; which laſt brought away many clots or grumes of congealed blood: but there was anxiety or oppreſſion about the heart, that afterwards increaſed; to which ſuc-

[s] In Epiſtola de Rad. Chinæ, Tom. II. operum, p. 674.
[t] Lib. vii. Ægrot. 14. Charter. Tom. IX. p. 558, 559.

ſucceeded faintings and a delirium. In the evening, there was great reſtleſſneſs of body from the anguiſh; the feet were cold, the head and breaſt hot, and at the approach of death he ran down with weak ſweats; but at laſt, having ſaid that he wanted to eaſe himſelf by ſtool, with dejected eyes he ſoon after expired. Whoever conſiders all the ſymptoms or appearances of this caſe, will not doubt but the patient laboured under a ſevere inflammation of the liver, and that by a rupture of the veſſels he periſhed with a profuſion of blood in the ſtools. From hence likewiſe, in his Coan Prognoſtics, he pronounces, *To diſcharge ſhining or pure blood, is a bad ſign either with other ſymptoms, or with a griping*[u]. And again, *But it is a fatal ſign to diſcharge blood by ſtools, in which a great deal of it is thrown out congealed or in grumes; ſo alſo white liquid ſtools, with a ſwelling of the belly, are fatal.*[w]. But here we are to obſerve, that theſe white and liquid ſtools, with a ſwelling of the belly, denote that the bile paſſed not into the inteſtines, and that therefore the diſtemper lodged about the liver.

From hence it alſo appears, why Hippocrates[x] condemns a vomiting of blood with a fever.

But when filth of a cadaverous or moſt fetid ſmell is diſcharged by ſtools, with a moſt intenſe fever, and unextinguiſhable thirſt, we know for certain that an inflammation of the liver is begun to change into a gangrene, and to corrupt this whole ample viſcus with a putrefaction of the worſt kind. But that a perpetual hickuping is in this malady to be eſteemed one of the worſt ſigns, was before demonſtrated from Hippocrates, in paſſages cited from him at §. 915: but an hickup may alſo ariſe from the quantity of evaſated blood, as we before remarked upon another occaſion at §. 659. Aretæus gives us moſt of theſe worſt ſymptoms which attend an hepatitis that inclines to be ſuddenly fatal: *For here there is a deep ſenſe of burning or heat,*

u Sanguinem ſplendidum dejicere, malum eſt, tum alias, tum ſi quis dolor adfuerit. N° 605. *Charter. Tom. VIII. p.* 888.

w Lethale autem et alvum ſanguinem dejicere, multa grumoſa dejectione; item album et liquidum, cum ventris tumore. *Ibid.* n° 611.

x Aphor. 37. ſect. 7. Charter. Tom. IX. p. 311.

heat, either violent or obſcure, a ſlight throbbing, with a various ſenſe of almoſt every kind of pain: for ſometimes the pain is fixed in the right ſide, ſo as to reſemble the piercing with a ſharp dart; ſometimes it is like the gripes: but ſometimes again the pain is conjoined with the utmoſt oppreſſion, aud there is a loſs both of the ſtrength and of the voice, &c. the whole ſurface of their body is tinged of a greeniſh or a ſort of leaden-colour, &c. there is a great ſluggiſhneſs or indiſpoſition to exerciſe throughout the body; the limbs are chilly, and tremble with ſhiverings; there is an empty convulſive hickup, a jaundice, and a transfuſion of mere bile, which tinges the whole body of a bilious colour[y].

§. 950. FROM all the particulars that we have hitherto explained relating to diſorders of the liver (§. 914 to 950.), one may be able to underſtand an infinite number of ſymptoms which preſent themſelves in acute diſeaſes, whoſe origin or production being not known has given birth to fabulous and empty names of malignancy: for upon the liver depend all the viſcera of the abdomen; and conſequently all their actions of digeſtion, aſſimilation, nutrition, recruiting of the blood, and diſcharge of the inteſtinal fæces, anſwer to the ſtate of this viſcus. In the liver we obſerve a threefold humour, very eaſily diſpoſed to putrefaction by heat; a great quantity of diſſolved blood, the hepatic bile, the cyſtic bile: We obſerve a great vicinity betwixt the liver, diaphragm, and heart; and when the bilious extremities

[y] Ignis enim profundus, obſcurus, acer, pulſus torpidi, doloris ſpecies varia omnis generis: nonnunquam enim dextra in parte defigitur, adeo ut acutum telum adactum eſſe videatur; interdum torminibus ſimilis eſt: rurſum vero interdum dolor cum ſumma gravitate conjungitur, atque inter dolendum proſtratio virium et vocis privatio, &c. colore ex atro viridi infecti ſunt, plumbeo quaſi, &c. magna eſt in corpore ſegnities, extrema frigent, tremor adeſt, horrores, ſingultus inanis convulſivus, icterus, mera bilis, totum corpus bilioſo colore perfunditur. *De Cauſis et Signis Morb. Acutor. lib.* ii. *cap.* 7. *p.* 19.

mities of the portal veſſels are obſtructed, the bi
lious blood or liquor of the portal veins eaſil
paſſes into the vena cava. And from thoſe prin
ciples a lone one may perceive, How many and hov
different ſpecies there are of the jaundice: Un
der what circumſtances, and for what reaſons, i
may be ſometimes eaſily cured; and why, again
it is often ſo extremely ſtubborn of cure: Why
it often kills very ſuddenly, or very ſlowly: Why
it invades, continues, goes away, and returns a
gain repeatedly at ſeveral times: Why its appear
ance is often uſhered in with ſuch anxieties, vo
mitings, pains, and convulſive motions preceding
afterwards grows dormant, and then returns a
gain; and what we are to expect, as denoted in
ſuch a caſe: Why in acute or febrile diſtemper
a jaundice is ſo bad a diſaſter, appearing before
the ſeventh day of the malady; and why it is ſo
incorrigible after the ſeventh day: Why it is ſo
well removed by a copious dyſentery that ſpeedi
ly terminates: Why blood-letting gives ſo little
relief in theſe maladies: Why in all acute diſ
tempers it is ſo neceſſary to give due attention
to pains, ſwellings, and ariſings backward o
upward of the hypochondria: Why the colou
of the eyes and of the urine gives ſuch early no
tice of the invaſion and retreat of a jaundice: Why
an inflammation, ſuppuration, gangrenous, ſchir
rhous, or cancerous diſorder in the ſpleen, ſto
mach, omentum, meſentery, or inteſtines, doe
always ſo much affect or greatly injure the live
itſelf; and why, again, all inflammatory or ſchir
rhous diſorders of the liver ſo egregiouſly afflict
thoſe ſeveral parts: Why the liver is liable to ſwel
and enlarge to ſo monſtrous a bulk, and may a
gain grow dry or ſhrink up: Why from a diſtem
pered

pered liver a dropſy follows, or a tympany that is ſtill more dreadful: Why in a dropſy the liver ſo much dwindles away and dries up, while the ſpleen grows bigger: What the nature is of an hepatic dyſentery: With almoſt an infinite variety of other problems relative to theſe matters.

We come now to ſome practical deductions or corollaries that follow from what has been advanced concerning an hepatitis, and which afford us great light both in the knowledge and cure of moſt diſtempers.

Symptoms, of a production unknown, *&c.*] In acute fevers, phyſicians have obſerved more eſpecially a twofold difference. For either they have been attended with great violence of the circulation, intenſe heat of the whole body, a ſhort and quick breathing, with a quick, ſtrong, and large pulſe of the artery; and here all things ſeem highly ſerviceable, which conduce to leſſen the motion and quantity of the blood or humours, as phlebotomy, diluents, nitrous medicines, *&c.* ſo that by art theſe fevers have been happily cured, although they at firſt invaded with the utmoſt violence. But we obſerve alſo another worſe kind of acute fevers, ſtill more dangerous, in which the powers of the body are ſuddenly and greatly weakened; the heat is much leſs; there attends a chilline ſs of the limbs, and great oppreſſion or anguiſh; the pulſe is very quick, weak, and unequal, often vaniſhing ſo as to be imperceptible under the finger of the phyſician; and the thirſt is often little or none at all. Theſe fevers, from the ſudden weakneſs of the powers, which they bring even upon the ſtrongeſt perſons, without any apparent diſcharges, have not without reaſon been denominated *malignant* by the moſt experienced phyſicians. Now repeated obſervation in theſe fevers has taught us, that ſuch remedies prove uſeful as raiſe the depreſſed powers, or at leaſt excite the juices to motion by an aromatic ſtimulus; whence ſcordium, rue, angelica, and the like vegetable ſubſtances that have

gained

gained the title of *alexipharmics*, are administered in such fevers with the most desirable effects, provided they are given in great plenty of a watery drink or infusion, to be drank warm, with the addition of a little wine or vinegar: for when the body has been well filled with these, a moderate sweat usually breaks forth, by which the vital powers of the body are increased while the epidemical miasma, or vapour, that produced the whole malady, is often expelled from the habit. But when this method of cure has been used in the former kind of inflammatory, or ardent fevers, where there is a great heat and thickness of the blood, all the symptoms have been rendered much worse, and the patients have thereby been exposed to the utmost danger. For this reason Sydenham so strenuously opposed both the term and treatment of *malignity* in fevers, which the physicians of that day abused and applied to all bad fevers, even to the inflammatory ones, as we before observed at §. 736; for in consequence of this empty term, they destroyed many patients by the hot regimen, with excessive sweats, who might otherwise have been recovered by a more temperate method of cure.

But since an inflammation of the liver is often attended with great anguish, or oppression, (see §. 631.); and as all the functions of the several viscera in the abdomen must either be impeded or much disturbed from the free course of the blood being obstructed through the portal veins of the liver; there will be therefore sometimes a great weakness of the vital powers from the corrupted bile that in this case often lodges itself about the præcordia or stomach (see §. 661.), from whence some have unskilfully treated such an inflammatory hepatitis as if it were a malignant fever, of the kind above described, and not without the highest damage to the patient: but a diligent observation of the causes of an hepatitis (§. 916.) and of its effects (§. 918.) which are also the demonstrative signs of the present malady, will allow no circumspect physician to fall into such a mistake.

In the liver, a threefold humour, *&c.*] The bile is known

known to be one of the ſharpeſt or moſt lixivial juices inhabiting the body, very ſpeedily putrefying [z]; and the blood of the vena portarum contains the immediate matter of this ſoapy fluid: but the bile retained in the blood has the power of melting or diſſolving its texture, inſomuch that, after a long continued jaundice, the blood too much relaxed and fuſed by the intermixed bile commonly ends in an incurable dropſy. Moreover, the venous blood returning from the ſtomach and inteſtines, contains in it the moſt fluid parts of the alimentary bile abſorbed by the meſenterical veins; the blood going from the ſpleen to the liver, by the ſplenic vein, is extremely thin and diſſolved; and the venous blood from the omentum contains in it much of the dewy moiſture abſorbed from the capacity of the abdomen, into which it exhaled from the arteries: From all which the reaſon appears, why the blood of the vena portarum is ſo thin and dilute, notwithſtanding it is now become venous, after having loſt much by the arterial ſecretions; for, every thing duly conſidered, this blood ſeems to return with more thin juices to the liver, than it firſt carried when it was arterial. Now ſuch blood, ſtagnant in the large trunk and branches of the vena portarum, while the liver itſelf is obſtructed, being lodged in ſo warm a place, continually ſhook by the reſpiration, and charged with the immediate matter of the bile itſelf that is ſo apt to putrefy, muſt of courſe be thus very eaſily corrupted; and for this reaſon we obſerved, that laudable matter is ſeldom formed by a ſuppuration in the liver (ſee §. 933.), and that a fatal putrefaction is much rather to be feared.

Great vicinity betwixt the liver, diaphragm, and heart.] How large a ſurface of the liver is covered by the diaphragm, is well known from anatomy, inſomuch that the right ſide or half of the diaphragm is by the contiguous liver thruſt higher up into the capacity of the thorax than the left [a]. Moreover, the whole ſurface of the diaphragm that lies next the ab-

[z] H. Boerh. Inſtitut. Medic. ſect. 99.

[a] Albini Hiſt. Muſcul. lib. iii. cap. 81. p. 300.

domen is covered by the peritonæum, except abou the vena cava, where the liver is naked to its con tact [b]. It cannot be therefore any wonder if disorder of the liver often affect the diaphragm to which it i annexed, as we shewed by an example at §. 946, no 5

But the liver has likewise a very great vicinity to th heart itself: since betwixt the liver, and the pericar dium that includes the heart, there is nothing inter posed but the thin tendinous part of the diaphragm And again, the lower vena cava, that opens into th heart, is rooted into the liver; from whence emergin through the diaphragm, it immediately after form the right venous sinus: from which it is apparent that violent distempers of the liver must likewise in jure the contiguous heart.

Bilious extremities of the portal veins obstructed *&c.*] For whatever juices flow through the vena por tarum, have from thence a twofold exit; either thro the secretory canals into the hepatic pores and ducts or else through the final extremities of the vena por tarum into those of the vena cava, by whose branche spread through the liver it goes on to the trunk of th cava, that opens into the right sinus and capacity c the heart. But since the hepatic bile, secreted fro the blood of the vena portarum, is a fluid much thin ner than the blood itself; it is therefore easily appa rent, that if an obstruction arises to its course throug the bilious canals, the said bilious juice will retur and go together with the blood through the vena cava so as to infect the whole mass of circulating fluid with a bilious cocochymia. It is true indeed, the bilious canals, that convey away the bile as it drains c secretes from the blood of the vena portarum, ar not very easily obstructed, but from a violent cause since the fluid has a motion through them from a le to a more largely opening part of the vessel; but the it meets with a much narrower passage through th entrance of the common duct into the intestine calle duodenum, where obstacles often oppose its exclu sion. Again, we before observed, that the bile an eve

[b] Ibid. p. 308.

even the blood containing the immediate matter that forms the bile, is very much inclined to run into calculous concretions, which being once formed, and daily enlarged, may eaſily block up theſe paſſages. Finally, all ſorts of tumours ſeated in the liver, whether inflammatory, ſuppurative, ſchirrhous, ſteatomatous, or the like, may produce ſuch an obſtruction, by compreſſing the parts that lie contiguous. See alſo what has been ſaid upon this ſubject at §. 119.

But as by an obſtruction of the biliary tubes the matter of the bile is obliged to paſs into the vena cava; ſo likewiſe an obſtruction in the final ſtraits of the vena portarum, rendering the blood's paſſage difficult into the cava, may ſometimes probably ſo dilate the biliferous ducts or tubes, that they will give admittance to the red blood to paſs through them in a conſiderable quantity to the duodenum, from whence it may be expelled both upwards and downwards out of the body. Such a difficult paſſage of the blood through the final ſtraits of the vena portarum into the branches of the cava, is the moſt frequently and powerfully occaſioned by an atrabiliary tenacity; and caſes of this ſort have occurred often to myſelf, in the courſe of a long practice, and almoſt conſtantly in lean perſons of an atrabiliary temperature; more eſpecially in ſuch of them as had abuſed their conſtitution by profuſe ſpittings in the ſmoking of tobacco, which fluid ought otherwiſe to have been again returned into the blood from whence it was ſeparated. Thus I viſited a man, who, after great anguiſh about the præcordia, and a troubleſome heart-burn, had a vomiting of blood, which was ſoon followed with a copious diſcharge of blood likewiſe by ſtools, whereby he expired in a few hours. Together with ſome friends ſkilled in anatomy, I made a diligent ſcrutiny into all the abdominal viſcera of this deceaſed perſon; and yet we were not able to find one broken veſſel, nor any very apparent defect in any of the viſcera. I have ſeen other caſes of the ſame kind, but without their being fatal; nay, I have ſeen many recover and live afterwards in a tolerable good ſtate of health, even tho' they

have been ſometimes ſo far exhauſted of blood by the profuſe evacuations, as to fall into convulſions from the ſudden emptineſs of the blood-veſſels. But it is apparent theſe caſes muſt always be dangerous, altho' many may recover after ſuch bloody vomitings and purgings. In all thoſe patients, the bloody vomiting has been preceded by a troubleſome tightneſs about the abdomen; and they have been afflicted with a laſting heart-burn, more eſpecially upon filling the ſtomach with food. But we before obſerved, in treating upon Febrile Anguiſh, that when the obſtructing matter may be lodged only in the liver, yet the principal ſenſe of the complaint is by the patient perceived about the upper orifice of the ſtomach; and therefore, that ſymptom confirms us in the preſent opinion: but thoſe patients ſeem here to recover, who have a diſcharge of blood into the duodenum, not from any broken veſſels, but from an over-dilation of the biliary tubes; by which means the obſtructing matter that lodged in the final ſtraits of the vena portarum, being free from the preſſure of blood behind, is by the leſſer veſſels urged back again into the larger trunks (ſee §. 140, and 400.) and the obſtruction of the liver becomes thus happily reſolved.

Obſerving caſes of this kind in the courſe of my practice, I began thence to underſtand the reaſon why Hippocrates ſhould pronounce, That *a vomiting of blood is ſalutary in thoſe patients who have it without a fever; but if it be joined with a fever, it is a miſchievous ſign. Its cure is to be attempted by refrigerants and aſtringents* [c]. Such remedies I have here indeed uſed with the moſt deſirable ſucceſs, that the dilated and over-ſtrained veſſels might be reſtored to their former ſtrength or due firmneſs: it is alſo of good uſe here, that much blood being evacuated, gives the veſſels an opportunity to contract themſelves ſpontaneouſly; becauſe in ſuch weakened perſons the veſſels are both leſs filled, and their fluids are more ſlowly moved.

[c] Quicumque ſanguinem vomunt, ſi quidem ſine febre, ſalutare: ſi cum febre, malum. Curare oportet refrigerantibus et adſtringentibus. *Aphor.* 37. *ſect.* vii. *Charter. Tom. IX. p.* 311.

ved. There is yet another remarkable paſſage in Hippocrates that ſeems relative to this caſe: *Thoſe patients who have pains of the hypochondria, cardia, liver, and parts about the navel, recover if they have a diſcharge of blood (by ſtools doubtleſs); but if they have no ſuch diſcharge, the malady is fatal* [d].

How many, and how different kinds there are of the jaundice.] What a jaundice is, and how it is to be diſcovered and diſtinguiſhed by the change of colour which it introduces throughout the body, and more eſpecially in the white parts of it, we before declared at §. 918. But it always ſuppoſes either an impeded ſecretion of the bile from the blood of the vena portarum, or elſe an obſtacle to the free diſcharge of the bile into the inteſtine of the duodenum after is has been ſecreted. The firſt difference therefore of the jaundice will depend upon the bile, whether cyſtic or hepatic, or both, that regurgitates, or is refunded back into the blood; and then again it may vary according to the particular and diverſe diſpoſition of the bile itſelf, with its colours, and other very numerous circumſtances.

But there is a great variety of the jaundice, in reſpect to the cauſes which either impede the ſecretion of the bile in the liver, or obſtruct its diſcharge thence into the duodenum: for in what we before propoſed it appeared, that this cauſe might ſometimes be an inflammation, and that even in various degrees; and then it appeared that the like jaundice might ariſe from a ſuppuration conſequent on an inflammation, or elſe that, ariſing gradually with an incipient inflammation, it might continue on to become inveterate. But we have alſo reckoned up divers kinds of the jaundice, according to the different ways or outlets by which the collected matter in the liver may diſcharge itſelf. Laſtly, that a ſcirrhus either benign or indolent, or one that has begun to degenerate into

[d] Quibus dolores hypochondriorum, cardiæ, hepatis, partium circa umbilicum, excreto ſanguine (per alvum dejecto forte) ſervantur; non autem excreto, moriuntur. *Coac. Prænot.* nº 196. *Charter. Tom. VIII.* p. 868.

a cancer, has given birth to the diſeaſe we call a jaun-
dice. If now we again conſider the various organs
and parts that lie contiguous, and near about the li-
ver, more eſpecially at its hollow or concave part, it
may thence ſufficiently appear what a manifold idea
we are to entertain of the jaundice, which, being a
diſtemper only under one denomination, may be ſo
produced by the moſt different cauſes; an acurate know-
ledge of which cauſes is however of uſe to direct the
proper method of cure, as alſo to form a juſt progno-
ſis whether the jaundice may be cured or not, and
whether with eaſe or with difficulty.

Why, and when, the jaundice is ſometimes eaſily
cured.] We often meet with ſuch kinds of the jaun-
dice as are eaſily or ſpeedily cured, when the produc-
tive cauſe is but ſlight, or when the obſtacle impeding
the free diſcharge of the bile removes of its own ac-
cord, or at leaſt eaſily ſubmits to the uſe of remedies.
Thus, for example, a jaundice ariſing from a more
ſlight inflammation of the liver, curable by a mild re-
ſolution (§. 922.), or by a concoction and excretion
of the morbific cauſe (§. 923.), yields eaſily to the pro-
per treatment. So likewiſe, in women big with child,
when a jaundice ariſes from a compreſſure of the cy-
ſtic, or of the common biliary duct, by the tumefac-
tion of the enlarged womb, or from hard fæces col-
lected in the large colon under the liver, (ſee §. 918.)
in thoſe caſes, the fœtus being delivered, and the
fæces evacuated, the malady ceaſes ſpontaneouſly.
We often obſerve a jaundice of this ſort in new-born
infants, that proves eaſily curable. For during the
time that the infant lies dormant in the womb of its
mother, it exerts no motion of reſpiration upon the
viſcera contained in the abdomen; from whence the
bile is largely accumulated in the gall-bladder: The
tract of the inteſtines alſo is covered with a very thick
and viſcid mucus, and a large quantity of meconium
or tough greeniſh fæces uſually diſtends them; and
from thence the exit of the bile into the duodenum
is often intercepted; whence, by eaſily dilating the
biliary veſſels in the liver, it returns back again into
the

the blood, and there cauſes a jaundice. Sometimes, likewiſe, the ſame obſtruction of the bile into the duodenum, and its conſequent jaundice, will ariſe in new-born and ſucking infants, from the curdy or cheeſe-like coagulum of the firſt milk lodged in the duodenum. And in this caſe, if a ſcruple of Venice-ſoap be diſſolved in three ounces of water, and mixed with an ounce of the ſyrup of rhubarb; a ſpoonful given ſeveral times in the day will diſſolve the concrete, gently and gradually ſcour the ſides of the inteſtines, and expel their offending load, ſo as to cure that jaundice in a ſhort time. Even ſometimes, in more adult perſons, a jaundice ſhall ariſe from ſuch a load of phlegmatic matter lodged in the firſt paſſages: but when ſuch viſcid crudities have been firſt reſolved or rendered fluxile by attenuants, they are afterwards eaſily evacuated by vomitives or purgatives; upon which ſubject you may conſult what was ſaid upon the cure of a ſpontaneous and glutinous viſcid, at §. 69, *et ſeq.* Even Hippocrates [e] tells us of ſuch a jaundice ariſing from phlegm; and has pronounced it to be not fatal, but eaſily curable. Sometimes, again, the bile, by long ſtanding in the gall bladder, thickens into a viſcid that cannot eaſily paſs out from it in perſons ſtudious and addicted to a ſedentary or unactive life: and in that caſe Galen [f] has remarked, that the gall-bladder ſuffers the ſame effects as are obſerved in the urinary bladder, from too long a retention of urine; namely, that it becomes after a manner paralytic, ſo that it cannot conveniently evacuate or preſs out the bile that is now inſpiſſated. In thoſe patients a jaundice ariſes without a fever, but with a certain urgent ſenſe of heavineſs in the right hypochondrium: and Galen aſſures us, that after premiſing aperients, he has often cured ſuch patients, by the uſe of a cholagog or hepatic purgative, in one day's time. But if the malady, being ſomewhat more ſtubborn, refuſed ſo readily to yield, he then gave more powerful aperients, with ſtronger purgatives after them;

[e] De Internis Affection. cap 40. Charter. Tom. VII. p. 666.
[f] Lib. v. de Locis Affectis, cap. ult. Charter. ibid. p. 504.

them; by which a bilious matter, rather greeniſh than yellow, being evacuated, a ſpeedy cure happily followed.

Why a jaundice is often ſo extremely ſtubborn.] Namely, whenever the productive cauſe is ſo confirmed, as to be very difficultly, or not at all, removeable; or whenever the ſtructure and ſubſtance of the liver itſelf are ſo changed and corrupted by the diſeaſe, that for the future it can no longer perform the neceſſary ſecretion and excretion of the bile. The celebrated writer on conſumptions, Dr Bennet[g], found the neck of the gall-bladder ſtuffed with tophous or chalky matter in an icterical deceaſed body that was opened; but ſurgeons well know the difficulty of reſolving tumours that are once become tophous or indurated, even in parts that are freely acceſſible to the hand: but the gall-bladder in this ſubject was diſtended with a pellucid and inſipid ſerum, which hardened over the fire like the white of an egg; from whence it was evident the ſecretion of good bile was now aboliſhed in the patient. The cyſtic duct has alſo in theſe caſes been found perfectly cloſed or concreted together, inſomuch that a probe, paſſed through the opening of the common biliary duct, could by no means be made to enter into the cyſtic duct, and its gall-bladder, which, although filled with bile to the ſize of one's double-fiſt, could not be made by preſſure to ſend out one drop of bile; and even after the gall-bladder was divided through its middle, there appeared no diſtinguiſhable remains of any opening through the cyſtic duct from the cavity of the bladder[h]. Sometimes again, although the paſſage from the gall-bladder remains open enough to the duodenum, yet the ſtructure or ſubſtance of the liver is ſo far degenerated or corrupted, as to render the diſtemper equally incurable, as the celebrated du Verney[i] the younger has ſhewn us in the following obſervation. In the body of a virgin thirty years old, deceaſed of an aſcites or dropſy of the belly that followed a jaundice, the liver

[g] Tabidor. Theat. p. 58. [h] Medical Eſſays, Vol. II. nº 21. p. 310. [i] Acad. des Sciences, l'an 1701. Mem. p. 193.

ver was found of an obſcure yellow-colour, and, thro' a great part of its ſubſtance, dried up: the gall-bladder was dilated into a large bag, that tore open with a ſmall force, and contained a great quantity of hydatids or watery veſicles, together with a mixed matter, partly glutinous, in part lymphatic and bilious, and in part conſiſting of blackiſh grumes, which, being bruiſed betwixt the fingers, tinged them of a yellow-colour: but the opening of the bilious paſſage, as far as the duodenum, was ſo ample as to admit the little finger with eaſe, whence there was a very free courſe allowed for the contents of the gall-bladder to paſs into the duodenum; and the nurſe, who attended the patient in the courſe of her diſtemper, gave aſſurances that all the like ſubſtances were expelled by ſtools in her lifetime, as appeared to be found in the gall-bladder after her death. From hence therefore appears another cauſe of obſtinacy in a jaundice, from a morbid degeneracy in the ſubſtance of the liver, although the large biliary paſſages remain ſufficiently open. From what has been ſaid, likewiſe, it is apparent enough, that a jaundice ariſing from a ſchirrhus of the liver muſt be in the laſt degree ſtubborn.

Why a jaundice often kills very ſpeedily, often very ſlowly.] When an atrabiliary matter, that has been collected in the other viſcera, becomes diſſolved, acrid, and thrown ſuddenly with a febrile violence upon the liver, a ſpeedy death enſues; which is alſo the conſequence when the liver has an inflammation ſo violent as to break open its blood-veſſels, or cauſe a ſpreading gangrene, that ſoon corrupts the whole ſubſtance of the liver into a putrid pulp, as we ſhewed under the foregoing aphoriſm. But when an abſceſs or ulcer is once formed in the liver, if it does not point or ſhew itſelf outwardly, ſo as to admit of being opened, death is then as certainly although more ſlowly the conſequence, (ſee §. 937.) But the jaundice is much more chronic or lingering, when it proceeds from a ſchirrhus, from calculous concretions, or from an atrabiliary tenacity of the blood ſlowly collected in the liver. I had the care of a woman of threeſcore,

who

who had laboured under the jaundice for twelve years at the beginning of which ſpace, it went and returned by periods; but for the laſt year it remained continually on, and had tinged her whole body almoſt of a black colour, only her eyes were left with the appearance of a moſt intenſe yellow, inſomuch that the unhappy patient ſtruck horror into all that ſaw her. By a long-continued uſe of the juice of graſs, with the whey of milk, and the like, in the ſpring ſeaſon, followed with a courſe of the Spaw-waters during the ſummer-months, and a great quantity of Venice-ſoap given with honey in the winter, the matter impacted in her liver began at length to relent and diſſolve; and a purging came on, that held for ſix months, with a relief to all the ſymptoms; for the ſtools brought away a clay-like matter, extremely fetid, and always replete with ſmall rough granulations of calculi. Thus by keeping up her ſtrength with a ſuitable diet, aſſiſted with all the helps that wealth could afford, ſhe recovered from ſo obſtinate a malady; and has lived ſince in a tolerable good ſtate of health. It is true, ſhe very conſtantly adhered to the courſe of her cure, during two whole years; which is what phyſicians can very rarely, by any intreatments, obtain from their patients in ſuch chronic or lingering caſes: and I the more wondered at the patient courage of this old lady, as the firſt eighteen months wrought but very little advantage by all thoſe aſſiſtances of art, and ſhe was in the mean time often perſuaded by her friends to throw up ſo tedious a courſe of medicines, for a quiet expectancy of death, which they deemed here to be the only and ſure remedy.

Why a jaundice goes and returns, *&c.*] Such kinds of the jaundice do often occur in practice, as, being at firſt ſlight, go off, and return again after long intervals; and then as the malady gains more upon the liver, theſe temporary kinds of the jaundice return ſooner, and afflict either more violently or longer. Theſe kinds of the jaundice are in their beginning often not eaſily diſtinguiſhed by the leſs knowing or the leſs attentive phyſician, ſince after a ſlight cardialgia, and anguiſh

anguiſh about the præcordia, the patient will upon the next day have a yellow appearance in the eyes, and diſcharge an higher coloured urine; and then they ſeem to be very well again, until after ſome months, ſooner or later in ſome perſons than in others, there follows a ſudden return of all the ſame ſymptoms. Now, as here all the troubleſome uneaſineſs leaves the patient when the yellow colour of a jaundice begins to ſhew itſelf in the eyes, therefore many phyſicians have been wrongly induced to believe this a critical or ſalutary jaundice. Even Sydenham [k] ſeems not well to have underſtood the cauſe and nature of our preſent malady; ſince he deſcribes it under the denomination of an hypochondriacal or hyſterical colic, in the following terms: "A pain, hardly leſs ſevere than that of the colic or iliac paſſion, firſt invades the region of the ſtomach, and ſometimes extends itſelf to a ſmall diſtance below; which is ſucceeded by exorbitant vomitings, ſometimes of green, and ſometimes of yellow matter; and to theſe ſymptoms, as I have frequently obſerved, ſucceed a greater lowneſs of ſpirits and deſpondency than occur in any other diſeaſe. The pain goes off in a day or two, but returns again in a few weeks after, and rages with as much violence as ever, before the fit terminates. It is ſometimes attended with a remarkable *jaundice*, which vaniſhes ſpontaneouſly in a few days." Now this deſcription is moſt exactly conformable to our preſent malady in its adult ſtage; for it almoſt conſtantly begins firſt with ſlight attacks, tinging the whites of the eyes with but a faint yellow that is perceiveable only by the day-light, for with the light of a candle all things that are faintly yellow appear white; but even in the very firſt attacks of this diſtemper, there is always a very conſpicuous degree of yellowneſs in the urine. As I have had frequent opportunities of ſeeing this diſtemper, it may be of uſe to our readers if we give a deſcription of it that is ſtill more particular.

It is ſeldom to be met with in young perſons. It generally

[k] Sect. iv. cap. 7. p. 267.

generally invades thoſe who are full grown, and incli
ning to old age; more eſpecially ſuch as are afflicte
with long-continued grief, or, foſtering ſome great an
ger in their breaſts, ruminate day and night on venge
ful ideas; but, of all perſons, it invades thoſe moſ
who are given up to a ſedentary life (whence men o
letters are often its prey), and thoſe who feed richly
and after having filled their ſtomach ſit idly inclined t
the table, by which poſture of body all the abdomina
viſcera are compreſſed. They begin firſt to complain o
a troubleſome tightneſs about the præcordia, with
ſenſation like that of an oppreſſing weight; for ſom
hours after feeding there is a ſharp heart-burn, or pai
of the cardia, which I have ſometimes known to have
held the patient ſeveral months before a periodical jaun
dice of this kind. There is next obſerved a ſlight yel
lowneſs in the great corners of the eyes, the urine i
ſomewhat higher coloured, and bilious excrements are
depoſited by ſtool: afterwards a ſudden and unexplica
ble anguiſh ariſes, without any apparent cauſe forego
ing; with an intolerable pain about the cardia, and ſome
times even throughout the whole abdomen, whence it i
often believed to be the pain of a colic, or iliac paſſion
and laſtly, a fever adjoins itſelf, with enormous vomi
tings. But when theſe ſymptoms have continued ſome
hours, they abate, or go off; and leave the body all over
tinctured with the colour of a jaundice. In ſome per
ſons I have ſeen that the firſt attack of the malady has
only tinctured the face and breaſt of a yellow colour,
without affecting the other parts of the body; but
then the urine is dyed with a moſt deep yellow, and
the patient finds no other material complaint: yet
there are ſome who have a troubleſome pain in their
back and loins and ſides, before the yellowneſs ap
pears; which is a circumſtance that Hippocrates[1]
ſeems to have obſerved, when he ſays, "Thoſe who
"are invaded with a pain of the ſide and loins, with
"out a manifeſt cauſe, become icteritious." After
twenty-four hours time, ſooner or later, theſe pa
tients find themſelves ſeemingly well; and perceiving
no

[1] Coac. Prænot. nº 325. Charter. Tom. VIII. p. 870.

no more of their intolerable anguiſh, and preſſing weight about the præcordia, aſſure themſelves of gaining perfect health in a ſhort time: their urine accordingly grows by degrees leſs and leſs coloured, the yellow colour goes off every day more from their ſkin, ſo that in a few days there ſeems to be no remains of their diſtemper. And in ſome I have known an intolerable itching attend the whole time that the ſkin has continued ſuffuſed with the bile. But after ſome weeks, or even months, are paſt, the whole train of thoſe complaints returns again in the ſame order: and after the patient has been ſeveral times thus attacked, the jaundice at length remains perpetual, being worſe at ſome times than at others, but never attended with the violent ſymptoms that joined the firſt attacks; the icteritious colour is now very intenſe, and diffuſed all over the body; even the ſaliva itſelf (which is an obſervation ſomewhat rare) has a bitter taſte; and at length, in proceſs of time, the whole body looks almoſt of a black colour; the ankles or legs begin to ſwell more and more; and, finally, the abdomen filling with water takes off the patient by a dropſy.

Sometimes the attack of this malady is ſo violent, and the conjoined fever ſo intenſe, that a true inflammation of the liver enſues, and ſometimes ends in a ſpeedy death; ſometimes alſo a ſuppuration of the liver, that has been ſhewn to be ſo extremely dangerous, will follow, like the caſe that is given us in the Edinburgh Medical Eſſays [m]: but the former courſe of the malady more frequently obtains, terminating ſlowly, if it be not firſt cured, in death. But the fæces of the inteſtines ſometimes begin to appear white-grey, or clay-like, ſeveral days before the fit of the diſtemper; and ſometimes the firſt attacks of the malady begin with a flux of yellow matter by ſtool, while at the ſame time there is an apparent jaundice-colour of the ſkin and urine.

All theſe ſymptoms plainly teach us, that the cauſe of this malady is ſome obſtruction that hinders the flux of the cyſtic bile from paſſing into the inteſtinum

[m] Vol. II. nº 29. p. 345, &c.

duodenum, from thence the quantity of bile daily augmenting, it by degrees diſtends the gall-bladder to a greater capacity; until by the greater bulk or greater acrimony of the ſtagnant bile that is collected or by the irritation of ſome impeding obſtacle driven into the narrow part of the neck of the gall-bladder violent pains ariſe, with convulſive motions of the parts in the abdomen, enormous vomitings, and reſtleſs toſſing of the body from the anguiſh that is ſcarce tolerable. But by all theſe, even violent, concuſſions of the body, and more eſpecially by the moſt violent preſſure of the diaphragm and abdominal muſcles conſpiring together, either the impeding obſtacle to the bile's courſe is forwarded or removed, or elſe the contained bile of the gall-bladder is preſſed back again into the blood; ſo that by theſe efforts the cauſe over-diſtending the gall-bladder is either removed, or at leaſt is conſiderably diminiſhed: but then a jaundice enſues; and if the impeding cauſe, that intercepts the bile, be not at the ſame time removed, the bile, being afterwards by degrees accumulated, will cauſe a return of the whole tragedy. But when the bile has been often or repeatedly driven back again into the blood, the bilious veſſels become ſo dilated as to allow a repulſe of this fluid with much leſs force; and at length it may be able to return even with eaſe, whence the jaundice becomes perpetual; ſometimes indeed of a deep complexion, after a ſlight anguiſh or ſlight vomiting have been before; but the ſymptoms never return with that violence, as a ſlighter force ſuffices now to urge back the bile through the liver into the vena cava.

I have often wondered that theſe patients, thus labouring under a perpetual jaundice, ſhould yet keep up ſo keen an appetite, digeſt their food tolerably well and void their ſtools in like manner. Poſſibly the hepatic bile may at theſe times be ſupplied proportionably in a greater quantity, or with a greater degree of ſaponaceous acrimony, ſo as to anſwer the want of the cyſtic bile; or perhaps ſome part of the cyſtic bile may return back into the hepatic pores or tubes

tubes, and so increase the strength and action of the hepatic bile, for that there are ways open from the hepatic pores to the gall-bladder appears from anatomy. But all these patients become more or less emaciated; and at length fall into a dropsy, from the too great dissolution that the bile makes in the globular and cohesive texture of the blood, from the long continuance of the disease.

It appears then, from all that has been said, that any obstacle impeding or intercepting the passage of the bile from the gall-bladder may be the cause of the present malady; which may therefore be subject to various degrees of difficulty in the cure, as those causes are more easily or difficultly removable. Sometimes I have seen bile discharged by vomiting, as tough almost as glue; and the jaundice has no more returned after it. But numerous observations inform us, that the most frequent cause of such a periodical jaundice is some calculous concretion formed in the gall-bladder, cases of which kind are found almost in every author: for the bile confined, forms stony concretions in a very short time; as I observed in a quantity of that liquid that I left to putrefy in a clean glass-vessel, at the bottom of which I found calculous grumes. Among many that have been under my care for this malady, I have hardly seen any cured without a discharge of gall-stones, larger or smaller, that have come away in their stools, which are therefore to be diligently inspected in these cases. I have opened a number of bodies also deceased of the present malady, and always have found gall-stones of this kind; which indeed afford a very great variety as to their figure, colour, hardness, and magnitude: but those bilious calculi that have oftenest occurred to my observation, have been such as appeared outwardly with a colour and unctuosity almost like that of Venice-soap; and, upon breaking them, have included a yellow nucleus or kernel. I have now by me seventy of these stones differing in magnitude, and almost all of them approaching to a pyramidical figure, which were discharged by stools from an old lady, who afterwards

lived many years free from her malady. I took above an hundred ſtones of the ſame ſort out of the gall-bladder of another old woman, who died dropſical after a long-continued jaundice. And whilſt I am now writing, there is an illuſtrious old lady under my care, who, being afflicted with a jaundice for two years paſt, now begins to diſcharge gall-ſtones in her ſtools almoſt every day; which are ſometimes black, and very hard; ſometimes whitiſh, and variegated with blackiſh ſpecks; and ſometimes, though more rarely, of a yellow colour, which are of the ſofteſt texture: at the ſame time there is alſo the appearance of a great quantity of groſs ſand or gravel found in her ſtools. She has already diſcharged above two hundred, of which the largeſt ſtone exceeds not the ſize of a pea; from whence I am induced to believe, that larger ſtones remain ſtill behind, although her jaundice begins to go off. A few months paſt, in the body of a nobleman, who died of an hepatitis, after being ſeveral times afflicted with a periodical jaundice, I found a ſtone in the ſmall inteſtines reſembling in colour the famous ſtone that is called an American-porcupine, ſoft enough in its outer ſurface, but including a nucleus of a much harder conſiſtence, and more of a dark-brown colour.

Now it is eaſily apparent, ſuch ſtones produce no jaundice, unleſs they block up the courſe of the bile from the gall-bladder; and therefore if they are very often found by anatomiſts in bodies that have been never known to be afflicted with a jaundice, there is no reaſon thence to conclude that theſe ſtony concretions are unable to be the productive cauſe of a jaundice. From hence alſo one may underſtand, why, upon removing of the ſeat of theſe ſtones, a free paſſage may be opened for the bile into the inteſtines, ſo that ſometimes, even in the midſt of this jaundice, we have yellow ſtools; namely, when a quantity of bile is by the ſtrainings in vomiting urged into the duodenum, while the ſtones indeed impede its courſe, but not ſo far block it up as to prevent ſome bile flowing out when urged by a more violent preſſure. Indeed

deed we obſerve all the ſame appearances when a ſtone of the urinary bladder hinders the free exit of its contained fluid. It is thus apparent, therefore, that Helmont [n] has no reaſon to reprehend phyſicians for placing the cauſe of a jaundice in an obſtruction of the cyſtic duct; and that merely to eſtabliſh the idle notion of his excrementitious ferment, of which ſo many have dreamed after him throughout Germany.

Sometimes it will alſo happen, although rarely, that the diſcharge of the cyſtic bile ſhall be impeded, and the ſtools ſhall appear white, when yet there is no jaundice colour to be obſerved in the ſkin: but in ſuch a caſe the bile, although retained in the gall-bladder, is yet ſo viſcid or glutinous, that it cannot flow back again into the veſſels of the liver, but by gradually increaſing in quantity it inſenſibly over-ſtrains the gall-bladder to an immenſe bulk; of which a remarkable caſe is given us [o] in a lad twelve years old, who by a fall from a high place had a violent contuſion in his right hypochondrium, and thence, after ſuffering various complaints, died dropſical. In this body the gall-bladder was found of a prodigious bulk, including eight pounds of a thicker ſort of bile, of which there were formed a number of concentric ſtrata or bags, of a firmer conſiſtence as they approached nearer to the ſides of the gall-bladder, while thoſe ſeated towards the middle of the cyſt or bladder were more tender and leſs opaque: the common biliary duct was here much enlarged, and full of many ſmall ſpongy ſtones of a yellowiſh colour, that ſwimmed in the water in which they were put. But in the mean time it is obſervable, that in this lad there were no other remarkable ſymptoms of a jaundice, more than a white colour of the inteſtinal fæces.

Therefore, when ſuch a periodical kind of the jaundice has offered itſelf to my practice, agreeable to the admonitions firſt given me by the worthy author of theſe aphoriſms, and confirmed by reading numerous,

[n] In tractatu, cui titulus, *Scholarum humoriſtarum paſſiva deceptio atque ignorantia*, cap. 4. p. 820, &c.

[o] Medical Eſſays, Vol. II. n° 30. p. 352, &c.

rous obſervations, I have always thought of ſtones lodged in the gall-bladder; and have accordingly, even to this day, directed the whole ſcope of my curative intentions to that cauſe, and with the moſt deſirable ſucceſs.

It is ſelf-evident there are here only two ways of relieving the patient; either by diſſolving the concreted gall-ſtones, or by expediting their paſſage into the duodenum; by which laſt we may reaſonably hope for their evacuation, among the other inteſtinal contents, by the ſtools.

I have by many trials endeavoured to find a menſtruum able to diſſolve theſe calculous contretions, and of a kind that might reach to their ſeat with unchanged virtues, but have not yet been happy enough to diſcover ſuch. It is true, that a copious and long-continued uſe of the juice of graſs, dandelion, ſuccory, fumitory, and the like plants, has in the courſe of my practice been generally followed with plentiful diſcharges of ſtony fragments of this kind, expelled amongſt the inteſtinal fæces; and ſometimes even thoſe fæces themſelves have appeared hard, and rough ſet with ſuch fragments, ſo as even to excoriate the anus or end of the rectum in their excluſion: but I am not, therefore, certain they were fragments of ſtones thus broken within the body by ſuch a menſtruum; becauſe we often find ſuch ſmall rough calculi, fragments, and even ſand, within the gall-bladder, hepatic ducts, and even ſometimes in the ſubſtance of the liver itſelf. A very remarkable caſe of this kind we have related, from under the obſervation of Veſalius [p], in the body of Proſper Martelli, of the city of Florence, who for many years was afflicted with the jaundice, and at laſt died ſuddenly. "For "he found the gall-bladder twice as large as one's fiſt, "filled with a ſort of ſmall ſtones, that ſeemed made "up of ſmaller conjoined particles like the ſeeds of "millet, or rather very much like the rough ſurface "of the common tutty of the ſhops." It ſeems therefore, that the retained bile may ſometimes concrete into

[p] In Epiſtola de Radice Chinæ, Tom. II. p. 647.

into ſmall calculous grumes, without running together by length of time into larger calculi; from whence one might be miſtakenly induced to believe, that ſuch a diſcharge of them in the ſtools followed from a comminution of them into leſſer parts by the uſe of appropriated medicines.

The chief hopes, therefore, of a cure, will conſiſt in procuring a gradual dilatation of the paſſages thro' which theſe calculi muſt paſs, in their way by the narrow neck of the gall-bladder, through the cyſtic and common duct, into the duodenum. We are indeed taught by anatomy, that theſe ways are very narrow; but then numerous and faithful obſervations inform us, that they will admit of being wonderfully dilated, ſo as to yield a paſſage even to ſtones of a very conſiderable magnitude. Even the ſame thing we obſerve to ſucceed in the ureters; which are often wonderfully dilated, in thoſe that have been long ſubject to fits of the gravel, by the diſcharge of renal calculi: and I have myſelf ſeen them thus ſo much enlarged in a calculous patient, that I could eaſily inſert my fore-finger. But we even ſee there is a kind of periſtaltic or automatic motion in theſe maladies, by which nature endeavours the expulſion of the offending calculus: for we alſo ſee, that theſe bilious or icterical colics are uſually joined with enormous vomitings, that by the violent concuſſions of the abdomen the ſtone may be forwarded in its excluſion. And the like vomiting is alſo, with the like uſefulneſs, excited when a ſtone is driven through the ureter from the kidney to the bladder, as all phyſicians well know. But when once theſe paſſages have been enough dilated to tranſmit a calculus of ſome bulk, they will afterwards tranſmit more of the ſame ſort with much leſs difficulty, as ſufficiently appears from the foregoing obſervations. Many practical obſervations perſuade us, that the excluſion even of very large ſtones, by theſe ways, is not to be deſpaired of. I have obſerved, in the mother of my own wife, that after ſeveral fits of ſuch a periodical jaundice, a very ſevere pain would ſuddenly ariſe in that part of the abdomen

that

that is the ſeat of the duodenum, (as ſhe pointed out by her finger), ſo as almoſt to occaſion a ſwoon: but in a quarter of an hour after, this pain has ceaſed; and by diligent ſearch into the ſtools, a ſtone, which I have now by me, was found two days after the fit, appearing as large as the firſt joint of one's thumb, outwardly whitiſh and hard, but of a greaſy or ſoapy texture, and including internally a ſofter yellow kernel. But from obſerving two hollows impreſſed in the ſides of the ſame ſtone, I ſuſpected it lay with others of the like kind; as was afterwards found true, by the excluſion of two others not much leſs in bulk than the former. After theſe ſhe continued in tolerable good health, free from her jaundice. I have ſeen more caſes of the like kind in my practice; and medical hiſtories ſupply us with a great number of examples in which ſtones have been voided by the anus, where all circumſtances have concurred to ſhew that they were neither firſt bred in the inteſtines, nor afterwards increaſed there in their bulk by long ſtaying, but, being expelled from the gall-bladder, have, in a few days time, gained a paſſage thence through the inteſtines; and the manifeſt removing of the pain, conformable to the courſe of the fæces through the inteſtine, has ſhewn the ſame, when the ſtone has been ſo large or ſo rough as to paſs with ſome difficulty forwards. But I believe it will be needleſs for us to dwell longer in repetitions of the like caſes, ſince thoſe already given are ſufficient to ſhew the good grounds one may have to ſuſpect ſtones of the gall-bladder in every periodical jaundice; and that then we may not deſpair of obtaining a diſcharge of them from the gall-bladder into the duodenum, however conſiderable they may be in bulk, ſince the ſaid paſſages, naturally but of very ſcanty dimenſions, are yet capable of ſo conſiderable an enlargement, as plainly appears both from the patients that have been cured of ſuch a ſtubborn jaundice by an excluſion of the calculi, and from the anatomical obſervations that have been made in opened bodies. The celebrated Dr Laurence Heiſter [q] found, in the gall-bladder

[q] Acta Phyſico.-Medica Natur. Curioſ. Tom. I. p. 494.

bladder of a woman that was publicly diſſected, a ſtone as large as a walnut, of a deep yellow colour, but very friable. But here the opening of the common duct of the bile into the duodenum, which ſhould not naturally much exceed the dimenſions of a ſmall ſtraw, was ſo large as to give an eaſy admittance to the little finger; being, doubtleſs, ſo much dilated by the like large ſtones that had before gained a paſſage from the gall-bladder.

Now the curative treatment of theſe patients is either ſuch as is ſuited to the time of their paroxyſm, or fit of great anguiſh, pain, and vomiting; or to the productive cauſe of the diſtemper itſelf, when thoſe ſymptoms have ceaſed, and a conſequent jaundice appears.

In the *former*, during the urgency of thoſe troubleſome ſymptoms, nothing can be given better than a decoction of barley with honey, whereby, the ſtomach being moderately filled, the vomiting will be facilitated; and, beſides this, the vomitings may be longer ſuſtained, by the repeated draughts of ſuch a liquor, taken upon the nauſeating ſtomach after every fit of vomiting. For theſe ſalutary efforts of nature greatly conduce to move forward the ſtone, and preſs out the accumulated bile, if the paſſages are not entirely blocked up; or at worſt it may be thus repelled into the blood, with a relief to all the preſſing ſymptoms. That liquor will be alſo ſerviceable injected in the form of clyſters, to waſh out the groſs fæces that encumber the colon, where, by their weight and preſſure, they may impede the excluſion of the bile, as we before intimated. But where the intolerable anguiſh and exceſſive vomiting prove over-violent for the patient's ſtrength, or the ſeverity of the pains too urgent, opiates may be given to good advantage for quieting the diſturbances. Nor will an opiate here retard the expulſion of the ſtone; but rather, conformable to obſervations, it will facilitate the paſſage; for the moſt uneaſineſs is commonly perceived while the ſtone lies in the narrow duct of the gall-bladder, or ſticks at the narrow opening of the common duct betwixt the coats of the inteſtine called *duodenum*: for the irritation given to theſe

theſe parts by a rough or a large ſtone, often occaſion ſuch a convulſive conſtriction in them, that the ſton is for ſome time arreſted by it. But a relief to th pain by an opiate, as all phyſicians well know, wil by relaxing the cramped parts, procure a more eaſ excluſion to the calculus: and for the ſame reaſons w ſo often ſucceſsfully adminiſter opiates for ſtone c gravel of the kidneys, arreſted in the narrower part of the ureters, in the way to the bladder; obſerving a the ſame time to lubricate and relax the paſſages wit emollient decoctions, plenty of oil of almonds, warm bathing, *&c.* But where the ſigns denote an inflam mation is to be feared, or that too great a fullneſs c blood will endanger a rupture of ſome veſſels by th ſtrainings to vomit, blood-letting will then be of ſer vice; which otherwiſe will conduce nothing to th cure of the complaint, as every one may eaſily per ceive.

As to the *other* part of the curative treatment. Af ter thoſe urgent ſymptoms have been quieted, thef patients will in a few days often think themſelves per fectly well, ſo as to refuſe any further attendance. Ye they are to be diligently admoniſhed, that the root o their diſtemper is ſtill lurking in the body, from whenc the ſame ſymptoms will ſoon ſprout up again unle they ſubmit to a proper courſe for its extirpation Here then our indications are, To reſolve, and expel the ſtony concretions; which will be the more eaſil obtained, as the malady is more early diſcovered, an treated by a proper method of cure. For in the be ginning, theſe ſtones are both ſofter and leſs in bulk and may therefore be either diſſolved, or at leaſt mor eaſily excluded. For the obſervations of Gliſſon ſeem to ſhew us, (as we before obſerved at §. 916.) that th ſtony incruſtations of the hepatic veſſels in ſtall-fe oxen in the winter, again diſſolve by feeding on th green paſturage during the ſpring ſeaſon. Some year ago, I had the care of a poor man, who was obliged to maintain himſelf and a family by his day-labour and therefore unable to ſupport the expences of a courſe of medicines; but having good ſpirits, and a

great

great deſire to be relieved of his malady, by promiſing him a cure I eaſily perſuaded him to live altogether upon graſs. He boiled a large quantity of graſs in pure water; and after ſweetening the decoction with honey, made uſe of it for his common drink: and the tendereſt graſs, ſprouting in the ſpring ſeaſon, or riſing up again after the firſt mowing, he boiled in fleſh-broths, and made it entirely his food. He confeſſed indeed, that for ſome time, in the beginning of this courſe, his diet did but little pleaſe him; but growing accuſtomed to it by degrees, he could afterwards eat it without any kind of diſguſt, and therefore uſed it for two whole years except for ſome parts of the months in the winter-time. He aſſured me he could eaſily diſtinguiſh the beſt paſturages by the flavour of the graſs, and that he was obliged ſecretly to cut out his diet from the meadows; ſince the farmers, finding him to have ſo large an appetite, often gave him forcible repulſes. By this courſe only he was perfectly cured of a moſt obſtinate jaundice, in which even his ſaliva began to taſte bitter; and I ſaw him ſome years afterwards in a good ſtate of health. It will be highly ſerviceable in theſe caſes for the patient to drink daily ſix or eight pints of freſh-made whey, for the ſpace of ſome months: for this is a liquor that contains the entire virtues of the graſs, without being clogged with the butter and curdy parts of the milk. However, it is not every ſtomach that can diſpenſe with ſo great a quantity for their daily drink: And therefore I have ordered the ſtrongeſt decoctions of graſs, dandelion, ſuccory, fumitory, and the like graſſy herbs, to be made by boiling in the whey of milk, diſſolving half an ounce of the polychreſt ſalt in each pint of the decoction; to be then ſweetened with two or three ounces of the ſyrup of the five opening roots, or of fumitory, *&c.* A third part of this apozem is taken an hour before breakfaſt, dinner, and ſupper, every day, for three months; and then in the ſummer months I have directed a courſe of the Spaw waters; and, finally, preſcribed a large quantity of Venice-ſoap with honey to be given in the autumn and winter months, drinking after it

adecoction prepared from the five opening roots. Thus by conſtant perſeverance in the uſe of ſuch medicines I have known theſe periodical kinds of the jaundice to be cured; and have always then found ſtones in the ſtools, or at leaſt ſtony grumes in great plenty. In ſuch caſes, likewiſe, I have admoniſhed the patient to ſtrike often with his hand upon the right ſide, on that part of the hypochondrium where the bottom of the gall-bladder projects beyond the margin of the liver; and alſo to uſe horſe-riding, or that of a coach on a rough way, walking, and exerciſes of the body, by the reciprocal ſhocks or motions from which the ſtones might be broken, or at leaſt ground together and diminiſhed, or hindered from increaſing, and diſpoſed more eaſily for excluſion.

But when the ſtones lodged in the gall-bladder are of an extraordinary magnitude, or when the paſſages through which they muſt paſs are very narrow, and not ſufficiently dilatable, there is then but little hopes; ſince hitherto we know not any medicine that can diſſolve infallibly theſe gall-ſtones within the body. But obſervations have taught us, that ſometimes the gall-bladder diſtended with bile has grown to the peritonæum, where, by a conſequent inflammation, and ſuppuration, a fiſtulous ulcer has been formed, by which being dilated very large ſtones have been extracted from the gall-bladder, through the opening that has been been made in its bottom by the ſuppuration. The celebrated M. Petit[r] has here therefore not without reaſon propoſed the operation of cutting for ſtones of the gall-bladder, as both practicable and uſeful; namely, when everit appears that the bottom of the gall-bladder coheres with the peritonæum. But the ſigns by which one may know there is ſuch a coheſion of the gall-bladder are there enumerated, and joined with a number of obſervations that illuſtrate this ſubject; namely, under caſes wherein the enlarged tumour, or diſtention of the gall-bladder, was miſtakenly opened for an abſceſs. But it is to be obſerved, thoſe periſh by an effuſion of the bile into the

[r] Memoires de l'Academ. Royale de Chirurgie, Tom. I. p. 155—188.

the capacity of the abdomen, who have the gall-bladder opened without any such cohesion of it to the peritonæum; and therefore it is with good reason inculcated to be necessary to inquire diligently into, and be well satisfied of, that truth. It may at first view indeed seem bold and severe in a surgeon that attempts this operation; but it is certainly less audacious than the first attempts to take the stone by cutting from the urinary bladder.

Why in acute or febrile distempers a jaundice is so calamitous before the seventh day.] It was before declared (at §. 564.) that *acute maladies* are properly so called, simply when they run swiftly, and with danger, through their course; and yet that they sometimes extend themselves to fourteen, or even twenty days: But that such diseases as terminated the most swiftly, within seven days, and with great danger, were called *peracute*. But from what has been said at §. 587, 741, concerning a Crisis and Critical Days, it appears that a concoction of the matter of the distemper, and a change of it into a better condition, are not to be expected in the increase or advance of the disease, but only when it has arrived to the height, or has begun to diminish. When therefore, in acute diseases, a jaundice appears before the seventh day, it is always to be suspected, because it rather denotes an increase of the malady, and that the vessels of the liver, which have hitherto remained pervious, are now beginning to be stuffed with the yet unconcocted matter: for even the fat of the omentum dissolved by an acute fever, and an atrabiliary matter fused by the same cause, may produce an hepatitis of the worst kind, as may be seen at §. 916. For which reason Hippocrates [s] has pronounced, "That a jaundice a-"rising before the seventh day in fevers is a bad or "mischievous sign." But then he afterwards very prudently subjoins, "unless the morbid humours go "off by stools." For if the atrabiliary or other matter driven into the liver there meets a difficult passage, and forms an obstruction of the vessels; yet by a dila-

[s] Aphor. 62. sect. iv. Charter. Tom. IX. p. 174.

tation of the biliary tubes it may ſoon paſs thenc through the hepatic pores, or ducts, into the inteſtines and be evacuated in ſtools, ſo as to diſencumber th liver: and in that caſe there is a kind of tranſlation c the morbid or heſitating matter, moved by the vic lence of the fever, into the portal veſſels of the liver but, making there only a ſhort ſtay, it is without fur ther damage to the liver expelled thence through th hepatic duct into the inteſtinum duodenum. Man caſes of this kind have come under my care; and a mong them one, of a man, who in the middle of th night fell into water that much affrighted him; whenc the next day he was taken ill, with a very ſharp pleu riſy in his left ſide: on the fourth day of the malady a jaundice-colour appeared in his eyes, with a conſi derable ſwelling in his hypochondria; but then on th ſame day he had five ſtools in the evening, whic brought relief, and the flux from the bowels conti nued until the end of the ninth day. The matter diſ charged by this flux was firſt yellow, and very fetid afterwards brown; and laſtly grey or aſh-coloured and more ill-ſmelling: but on the fourteenth day critical ſweat put an end to the diſtemper. Perhap this may lead to the underſtanding of another paſſag in Hippocrates, where we read, *In a bilious fever, jaundice ſupervening with a ſhivering before the ſevent day, terminates the fever; but if it unſeaſonably hap pens without the ſhivering, it is fatal*[t]." For th firſt jaundice in this caſe indeed obſtructs the liver but then the ſhivering which attends, ſhews that th obſtructing matter is not to ſtay long in the ſtraits o the vena portarum in the liver, but already begins t relent and fluctuate, as was proved more at large i the commentaries to §. 741, where we treated upon Critical Shivering that terminates an Ardent Fever.

But a jaundice has been miſchievous in acute diſ eaſes before the ſeventh day, when not attended b any flux to diſcharge the offending matter that op preſſed the liver; as appears from a number of obſer vation

[t] In biliosa febre ante ſeptimum diem icterus cum rigore ſupervenien febrim ſolvit: ſine rigore vero ſi fiat intempeſtive, lethale. *De Acu Morb. Vict. Charter. Tom. XI. p.* 163.

vations made by Hippocrates, which were mentioned before at §. 923, n° 4. And in a place there quoted, it is obſerved [u], that a copious evacuation by urine, ſtools, or an hæmorhage from the noſe, or by all together, has been of great ſervice; but in another patient, whom a jaundice invaded on the ſixth day of the malady, without any of thoſe evacuations, the diſtemper was fatal. But alſo, in another place, we read of Hermocrates [w], who was ſeized with a jaundice on the ſixth day of his malady: but his urines were crude or thin, and he became delirious; and although his diſtemper lingered beyond the time of thoſe that are acute, yet he expired on the twenty-ſeventh day. There was indeed a copious, and thin, or liquid flux, from the bowels, upon the twenty-fourth day of the diſtemper; but coming too late, it gave no relief: for the foundation of all ſucceſs, in theſe caſes, depends upon a ſpeedy diſcharge of the offending matter, that had been forced upon the liver by the violence of the diſtemper.

Why a jaundice is ſo ſtubborn in theſe after the ſeventh day.] That the matter of the diſtemper being concocted, and rendered fluxile, in acute inflammatory diſeaſes, may by a metaſtaſis leave the firſt ſeat, and remove to other parts, ſo as to excite new maladies, was before declared at §. 593. And at §. 839, 841, it appeared, that ſuch a matter might likewiſe go on to be depoſited on the liver: through which it is often unable to make its paſſage, without the greateſt difficulty; but ſometimes ſettling there, it cauſes a dangerous abſceſs, extremely difficult to cure, as we ſhewed more at large under §. 936. Therefore, although after the ſeventh day one might hope there could be no crude matter depoſited upon or driven into the liver, but what muſt by that time be ſomewhat concocted or ſubdued ſo as to be much leſs miſchievous; yet much damage is to be feared thence unleſs it again ſpeedily ſhifts its place of reſidence, or is ſome way diſcharged: therefore Hippocatres has

[u] Epidem. 1. textu 65. Charter. Tom. IX. p. 66. [w] Epidem 3. ægrot. 2. ibid. p. 210.

prudently made this distinction, when he says, *Quibus in febribus die septimo, aut nono, aut decimo quarto icterus obortus fuit, bonum,* (in the Coan Presages he calls it *judicatorium,* "critical;" and commends it even when appearing *undecimo die,* "on the eleventh "day,") *nisi dextrum hypochondrium durum fiat, aliquin non bonum*[x]: "In those fevers where a jaundice "arises on the seventh, ninth, or fourteenth day, it "makes a good or critical sign, unless it occasions "swelling of the right hypochondrium; but at other "times it is a bad sign." For if the hypochondrium grows hard, it is a sign the matter transferred is retained, and will in time either cause an abscess, or schirrhus if its more fluid parts are dissipated: For which reason, in another place[y], he lays down this general practical axiom; *Ictericis jecur durum fieri malum,* "It is a bad sign for the liver to become hard "in those who have a jaundice."

But since there are frequently critical disturbances attended with anxieties, when there are any infarctions of the lungs; therefore, these translations of the morbid matter, concocted and fused, upon the liver seem oftener to happen than is commonly believed; yet so that it stays not long in the liver, nor does it often so far impede the passage of the blood through the vena portarum in that viscus as to occasion a jaundice thereby; upon which article you may consult what was said in the commentaries to §. 633.

Why a copious dysentery, *&c.*] Because in that case the matter oppressing the liver is discharged through the intestines: But since, as in the beginning of this aphorism was declared, the contained humours of the liver very easily putrefy; therefore thus the matter being rendered more acrid, may prove the cause of griping pains in its passage through the intestines. But this dysentery must soon terminate, if it be salutary; namely, when the matter of the distemper is run off and the integrity of the liver not impaired: for if the liver

[x] Aphor. 64. sect. iv. Charter. Tom. IX. p. 175. Et Coacar. Prænot. nº 122. Charter. Tom. VIII. p. 858. [y] Aphor. 42. sect. iv. Charter. Tom. IX. p. 275.

liver be once corrupted, a lingering and incurable dyſentery follows. In the epidemical fevers that are deſcribed by Hippocrates [z], in ſome of thoſe patients who had a jaundice upon the ſixth day, he obſerves, that the diſtemper commonly ended in a dyſentery, by which many ſafely recovered. He likewiſe applauds a dyſentery that is not lingering, for the relief or cure of ſplenitic diſorders [a]. But we know all the humours of the ſpleen are derived from it into the vena portarum, which may convey it through the liver, and thence it may go into the inteſtines. Therefore, it is hence again apparent, that nature often makes it her common way to remove the matter of a diſtemper from ſome other parts of the body into the liver, and from the liver to exterminate it quite out of the habit by a dyſenterical flux.

Why blood-letting is ſo ineffectual, *&c.*] Blood-letting is for three purpoſes commonly uſed to the cure of an inflammation; namely, That any further hurt in the veſſels that are inflamed may be prevented, by leſſening the quantity and impetus of the blood in the obſtructed veſſel, (§. 396.); or that the veſſels diſtended with impervious matter may be reſtored to their proper vibrations, by diminiſhing the fluid that oppreſſes their muſcular and elaſtic force (§. 398.); or, laſtly, that the obſtructing matters, having a leſs impulſe of the fluids urging behind, may be repelled back into a larger part of the veſſel, and thereby remove the obſtruction (§. 400.) Now it readily appears, that all theſe effects of blood-letting will be much leſs in their efficacy towards curing an inflammation of the liver, ſince the blood of the portal ſyſtem is already venous, before it be driven into the converging branches of that veſſel in the liver; whence it follows, that the impreſſed force of the heart and arteries in this blood muſt be extremely weak: but when an inflammation is ſeated in the final extremities of the hepatic artery, bleeding will then have a more conſiderable effect, no leſs here than in other parts of the body. But although

[z] Epidem. i. textu 45, &c. Charter. Tom. IX. p. 66.

[a] Coac Praenot. nº 466. Charter. Tom. VIII. p. 879. et Aphor. 48. ſect. vi. Charter. Tom. IX. p. 281.

in the former hepatitis leſs efficacy may be expected from the lancet, yet the opening of a vein is not always to be condemned as uſeleſs in the malady; for it may reduce the too great violence of the fever (§. 610.) diminiſh the heat, relax or empty the veſſels, and allow a more eaſy entrance or admiſſion of diluents and attenuants to be thus more intimately mixed with the humours.

Why in every acute diſtemper it is ſo neceſſary to inquire into the ſtate of the hypochondria, *&c.*] We ſee throughout the works of Hippocrates, that he gave a ſtrict attendance to the various conditions of the hypochondria in moſt diſeaſes, and even oftener mentions the hypochondria than any thing that regards the pulſe. Conſult here, therefore, what was propoſed concerning the conditions of the hypochondria as a ſign in diſeaſes, under §. 701, 735, where we gave many particulars relative to this ſubject: And concerning a riſing outward of the hypochondria, as a ſign in a Paraphrenitis, we likewiſe treated at §. 909.

Why the colour of the eyes, and urines, are ſuch an immediate index, *&c.*] It is a conſtant obſervation that the colour of the eyes and urine always afford the earlieſt ſigns of a jaundice: for the bile, being a ſaponaceous fluid, eaſily diſſolves in the aqueous parts of the blood, and together with them paſſes into ſuch ſmall pellucid veſſels as will not naturally give admittance to the red blood or its yellow ſerum. Now the white tunica adnata of the eye being compoſed almoſt entirely of thoſe ſmaller veſſels, which appear almoſt naked, or only covered with a moſt thin pellicle; therefore the yellow colour ariſing from a commixture of the bile with the blood is here more immediately and plainly perceived than in any other parts of the body. But the renal tubes which ſecrete the urine do likewiſe deny admittance to the red blood, or its ſerum, and permit only the intermixed watery, ſaline, oily, and vitiated parts of thoſe fluids to diſtil through them; and therefore, for the former reaſons, the bile will likewiſe firſt ſhew itſelf in the urine, by tinging it immediately with its own colour. But in other parts of the

the body the thickneſs of the ſkin hinders ſo early an appearance of the yellowneſs; or at leaſt the numerous red-blood veſſels in them, turgid with that purple fluid, greatly obſcures the yellow colour of the ſmaller pellucid veſſels; as we ſee, for example, in the lips, where even the ſkin is very thin. But in a long-continued jaundice the red texture of the blood is gradually diſſolved by the intermixed bile, and bears daily a leſs proportion, while the quantity of the bile repelled into the blood is every day augmented; whence at length the whole body appears of an intenſe yellow, while the inteſtinal fæces, being no longer watered nor tinctured by the bile, appear of a whitiſh, or of a greyiſh colour; and ſo ſoon as theſe laſt regain their yellow colour in the inteſtines, the yellowneſs of the ſkin and urine goes off. But in the mean time it ſeems, that the bile has no eaſy admittance through thoſe veſſels that convey the chyle, nor thoſe which ſeparate the milk from the blood; for the chyle in the lacteals, in the lumbal cyſtern or receptacle, and in the thoracic duct, is always found white, and ſweet of taſte, although naturally there be ſo large a proportion of the yellow and bitter bile poured into the inteſtines. I ſaw a woman who had a yellow jaundice in her face, with an intenſe yellow-colour ſpread over her breaſt, while the reſt of her body kept its natural colour: and the infant which ſhe ſuckled had no diſguſt to her milk, nor was it affected with any yellowneſs or bitterneſs. It is alſo with great difficulty that the bile can gain any paſſage through the ſalival glandules; for in an incipient jaundice I never knew the patient complain of a bitter taſte in the mouth: but in an inveterate jaundice, I have ſometimes, although not always, remarked ſuch a complaint. Laſtly, in the more ſtubborn kinds of the jaundice, the blood is ſometimes ſo melted and corrupted by the bilious cacochymia, that hardly any of its more permanent red parts are left, but the whole habit throughout appears univerſally of a yellow-colour, both within and without the body, in ſo much that even the bones and cartilages are not exempted from the tincture of the bile; and even more,

thoſe very thin humours that are percolated throug the moſt ſubtle veſſels of the eyes, are ſo much tinc tured as to occaſion the images of all objects tranſmit ted through them to appear of a yellow-colour, as th late celebrated Hoffman[b] aſſures us he twice obſerved

Why diſorders of the other viſcera ſo much affect the liver, *&c.*] Firſt, becauſe the liver lies with it concavity incumbent upon moſt of the viſcera here mentioned; whereby diſorders in thoſe organs may injure the liver, even by mere contiguity. Secondly becauſe the venous blood returning from thoſe viſcera of the abdomen flows altogether into the trunk of the portal vein, by which it is afterwards diſtributed throughout the whole liver; and therefore, by this communication of their blood, diſorders in thoſe parts may be alſo eaſily imparted, or at leaſt the ſecretion of the bile may be greatly diſturbed in the liver, to which ſecretion the venous blood of all thoſe parts is required[c].

And why, on the reverſe, the liver ſo much affects them, *&c.*] For the reaſons laſt given: for, the liver being obſtructed, there is a ſtop to the free courſe of the blood through the ſmaller branches of the vena portarum; whence the veins of the viſcera that are ſubſervient to chylification cannot evacuate the blood they contain, although more of that red fluid continues to be impelled into them by the arteries; whence all thoſe parts become over-filled and ſtrained. This lets us into a knowledge of the reaſon of that anguiſh or anxiety which is felt through or about the præcordia when the liver is diſtempered; and alſo, why violent pains of very different kinds often occupy divers parts of the abdomen, and of the loins to which the meſentery is affixed, while the cauſe of the complaint lies at the ſame time within the liver. From hence it is, that thoſe pains are ſo often miſtakenly aſcribed to a diſorder of the kidneys, or to convulſive conſtrictions, when yet a conſequent jaundice often ſhews the true cauſe in a very ſhort time; into which miſtake the

[b] Fred. Hofm. medic. ration. ſyſtema, Tom. IV. part. iv. p. 353.
[c] H. Boerhaave Inſtitut. Medic. ſect. 359. nº 4.

the judicious Dr Morton has candidly confeſſed himſelf to have been led [d].

Why the liver may increaſe to ſuch an immenſe bulk, &c.] How great a bulk the liver may acquire when a large abſceſs, being formed by a ſuppuration, makes a daily collection of matter, was before ſhewn under §. 936. And even an obſtruction formed in this organ (as the hepatic veſſels are, like a pulp, ſo eaſily dilatable by the humours that continue to be urged into them) may increaſe the dimenſions of this viſcus to a monſtrous ſize; like the caſe of a ſchirrhous liver which we related under §. 946. But ſuch a dilatation of the veſſels which compoſe the ſubſtance of the liver muſt be the conſequence, when the juices driven into its fabric can gain no paſſage through.

But it ſeems to happen ſometimes, that, the bilious tubes in the liver being obſtructed, the final extremities of the vena portarum, which anaſtomoſe or communicate with the correſponding branches of the cava diſperſed through the liver, may be ſo dilated as to allow the arreſted blood an eaſy way to paſs on from the porta to the cava: in which caſe the obſtructed veſſels, being leſs urged, will ſuffer alſo leſs dilatation; or may even at length collapſe and concrete with their contained fluid into a denſe ſubſtance, ſo as to give the liver a dry or juiceleſs appearance, and diminiſh its bulk. Moreover, there have been ſome veins found in the meſentery [e] which open not into the large meſenterical vein, but ſend their blood into the cava itſelf; whence it ſeems not improbable, that, an obſtruction being formed about the ends of the portal veins in the liver, the blood brought by the two meſenterical arteries may then gain a paſſage, through thoſe by-veins, directly to the heart, without ever paſſing to the liver. Perhaps alſo the blood, by a retrograde motion, may in ſuch caſes return back through the arteries themſelves from the veins, ſince theſe laſt have no valves in theſe parts, as we obſerved before upon another occaſion at §. 918. Under ſuch circumſtances, all the functions

[d] Oper. Medic. lib. iii. cap. 13. p. 138.

[e] H. Boerhaave Inſtitut. Medic. ſect. 336.

functions of the liver are disturbed or abolished, and the patient holds up a great while under his languishing malady, while the liver itself may shrink up to a bulk incredibly small.

The celebrated Tulpius[f] found the spleen very much enlarged in the body of a man who died of a dropsy with a copious evacuation of blood upward and downward; but the liver appeared dry and burnt up. He also found in the body of a woman deceased of a jaundice, with a dropsy[g], "that the liver was become so "dry, black, and juiceless, that it appeared contracted "into itself, like leather that is shrivelled by heat, "and was scarce equal in bulk to two fists." Livers that have put on such a dry and juiceless condition have been likewise observed several times by myself in the opening of bodies deceased of a jaundice.

Why an ascites, or a tympany more cruel than that, may spring from a disease of the liver.] It will hereafter be made to appear, when we treat upon the Dropsy, that a want of the larger red parts in the blood disposes the body to that distemper: but in an obstinate jaundice, the bile continually repelled into the blood so dissolves the red cruor, that at length hardly any of that colour remains. And again in physiology it is shewn[h], that, among other uses ascribed to the omentum, one is to absorb the moist vapours that are continually poured into the abdomen of an healthy animal: but as all the venous blood of the omentum goes to the liver, if there be an obstruction in that organ, the veins of the omentum cannot evacuate themselves; whence the absorption by veins of this part will of course be impeded by their over-distension, and the rosicid vapours will be collected in the capacity of the abdomen, and may there by degrees form an ascites. But all practical physicians well know how rare it is to make a cure of a dropsy which has been caused by a disorder of the abdominal viscera, more especially of the liver. For although by tapping, or any other evacuation, the waters may be discharged from

[f] Observ. Medic. lib. ii. cap. 35. p. 153. [g] Ibid. cap. 36. p. 154. [h] H. Boerh. Instit. Medic. sect. 331.

rom the abdomen ; yet the productive cauſe ſtill remaining, often inflexible to all remedies, will procure a return of the dropſy, and that frequently in a very little time.

But that a putrefaction is much to be dreaded in diſtempers of the liver, may appear from what we propoſed at §. 918, 933 ; and likewiſe before, at §. 647, it appeared, in treating upon the material cauſe of Flatus and Belchings, that the permanent air lodged in our animal ſolids and fluids, is by a putrefaction of them extricated, and collected in an elaſtic ſtate ; and therefore the reaſon is thence apparent, why a gympany following a putrefaction in the liver is a diſemper ſo much more cruel than an aſcites, as we lately obſerved at §. 939, and as we ſhall more plainly make to appear hereafter in the chapter upon a Dropſy.

Why the liver is extenuated or waſted by a dropſy, *&c.*] Of this we treated a little above, when we mentioned the cauſes by which the liver might become ſo much dried up.

Which dyſenteries are hepatical.] If the collected matter in the liver makes its way through the hepatic pores, it may then find a way into the inteſtines ; which are then often irritated by its acrimony into very ſevere gripes or pains, with a perpetual teneſmus or inclination to ſtool. While in this manner the matter of the diſeaſe may be carried off by the dyſentery, without injuring the ſound ſtate of the liver, ſuch a dyſentery will be ſalutary ; as we a little before ſhewed, with confirmations from Hippocrates. But where a corrupt pus or matter, rendered acrimonious by ſtanding, drains into the inteſtines from an abſceſs in the liver, it makes a dyſentery of a much worſe kind. Or if, again, a moſt putrid or cadaverous liquid drains from the corrupted liver, or if a corroding ichor ſhall diſtil into the inteſtines from a ſchirrhus of the liver degenerating into a cancer, a fatal dyſentery then enſues, that is curable by no art. Therefore Hippocrates [i] with good reaſon has pronounced thoſe to be bad dyſenteries which invade with an inflammation

[i] Prædict. lib. ii. cap. 13. Charter. Tom. VIII. p. 821.

flammation upon the liver. But thoſe were ſalutar dyſenteries which he has obſerved in his epidemics, i patients who had a jaundice upon the ſixth day of th malady, towards the cloſe of their diſtemper; whic ſhews the great difference in theſe diſcharges.

Of an INFLAMMATION of the STOMACH.

§. 951. THE ſtomach, like other parts of th body, is liable to be invaded by true phlegmon or inflammation; of which the foll lowing may be commonly taken for the demon ſtrative ſigns, and effects or ſymptoms: A burn ing and fixed pain, that urges in a point where the ſtomach is ſeated, and which becomes more excruciating in that point or ſmall ſpace when ever any thing is taken into the ſtomach; a moſt painful rejection or vomiting immediately afte every thing that is ſwallowed, with a painful hic kuping; extreme and perpetual anguiſh abou the præcordia; with an acute continual fever The cauſes are here ſuch as belong in general t inflammations; or it may ſpring from things acri taken into the ſtomach, or from a phlegmon ſeat ed in ſome of the neighbouring parts.

Since it was before demonſtrated (§. 373.) that al parts of the body, which have any reticular diſtribu tions of blood-veſſels or arteries, and which give riſ to lymphatic arteries, may become the ſeat of inflam mation; it will appear plainly enough, that the ſto mach is to be reckoned very liable to the like malady ſince the Ruyſchian art of injections has demonſtrate ſuch numberleſs arteries diſtributed throughout th ſubſtance of the ſtomach, and mutually communica ting one with another by numerous inoſculations, t the

the end that any ill effects from obſtruction or preſſure in one part might be avoided by the open paſſage that is afforded in another; and for the ſame reaſons, the ſtomach is furniſhed with four ſeveral arterial trunks from diſtinct quarters[a]. We do not therefore find an inflammation of the ſtomach ſo often mentioned by phyſicians; and even in Hippocrates it is only ſet out under the general denomination of a Phlegmon of the Præcordia.

If now you make a particular application of what was ſaid upon the ſigns of inflammations (§. 382.) to the ſtomach itſelf, the diagnoſis of the preſent malady may eaſily and fully be thence derived: but the principal of thoſe diagnoſtic ſigns will be found the following.

A burning and fixed pain, *&c.*] It is well known from anatomy, that the ſtomach occupies the upper and anterior part of the abdomen, is in part covered by the liver to the right, and has the ſpleen adjacent to it on the left, with the pancreas extended beneath it, and the diaphragm contiguous above, through which laſt its upper orifice has a paſſage: and therefore an inflammation formed in theſe adjacent parts may render the diagnoſis of a phlegmon in the ſtomach ſomewhat doubtful. To which add the change of place which the ſtomach undergoes in the ſame perſon at different times, according as it is either full or empty, or diſtended by flatus, aliments, *&c.* Moreover, there are ſometimes wonderful diſlocations and varieties obſerved in the abdominal viſcera, and particularly in the ſtomach; as we remarked before at §. 169, in treating upon the prognoſis of wounds.

More excruciating when any thing is taken into the ſtomach, *&c.*] This is almoſt a pathognomic or eſſential ſign of a cardiac phlegmon, when the pain is ſo exaſperated by any thing taken into the ſtomach, even in ſmall quantities, and of a ſort that at other times is eaſy enough upon this receptacle. Indeed, if the inflammation be ſeated in the parts ſurrounding the ſtomach, it will be irritated by the diſtenſion of this

[a] H. Boerh. Inſtit. Medic. ſect. 77.

organ; but then a ſudden exaſperation of the pain w not be immediately perceived by ſmall quantities ſw lowed into the ſtomach. Therefore a vomiting he uſually follows almoſt inſtantaneouſly after ſuch ſw lowings, with a moſt ſevere pain, during the time th the inflamed part is convulſed, and violently cor preſſed by the action of the diaphragm and abdomin muſcles. But why a ſingultus or hickuping follow phlegmon in the ſtomach, is apparent from what v propoſed before upon the ſame article, in the cor ment to §. 659.

Extreme and perpetual anguiſh, *&c.*] Anatomy i forms us how extremely numerous the nerves a which ſpread through the ſtomach; and demonſtrat to the obſervation of every one, that alſo the eighth wandering pair of nerves, diſperſing itſelf through the abdominal viſcera, runs not only near, but ev contiguous with, the upper oriſice of the ſtomac Therefore when the painful or diſtended parts of t ſtomach compreſs, irritate, or ſtrain the adjace nerves, the moſt troubleſome cramps or convulſi motions and conſtrictions are excited through all t abdominal viſcera; from whence anguiſh is produce in the manner we before explained it at §. 633. Hen it is, that ſuch extremities of anguiſh are perceived long as poiſons are lodged within the ſtomach; even when that organ is irritated by corrupt bile, by the eating much livers of fiſh (extremely apt to p trefy upon the ſtomach), an intolerable anguiſh e ſues, and continues until the ſtomach has thrown u its contents.

An acute continual fever.] Which uſually accom panies every conſiderable inflammation, but mo eſpecially thoſe of the viſcera. But the reaſon of th we gave in our Hiſtory of Inflammation, at §. 38 nº 8.

As for the cauſes that are in general productive inflammation, we have already often mentioned them and what we have ſaid of them may be well applie to the preſent organ. But perhaps the moſt freque among them all is the drinking of very cold liquo

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after the body has been firſt exceſſively heated by exerciſes; concerning the miſchievous effects of which ill conduct, we have often treated already under the inflammatory diſeaſes foregoing (§. 881.) For as drinks paſs directly into the ſtomach, they will of courſe operate more powerfully and with worſe effects upon that; inſomuch, that ſometimes both orifices of the ſtomach are thereby ſuddenly contracted with ſuch a convulſive force, as to be perfectly unable to diſmiſs one drop of its contents, either upwards or downwards; more eſpecially, when one, who is thirſty and hot with laborious exerciſe, drinks altogether, at one and the ſame time, a very large quantity of the coldeſt drink; from which cauſe I have myſelf been a witneſs to the moſt intolerable anguiſh, and ſpeedy death within a few hours. The late celebrated Dr Frederic Hoffman [b] relates ſeveral caſes of this kind, in which an inflammation of the ſtomach aroſe from this cauſe; and makes a very juſt concluſion, that it is a malady which happens much oftener than is commonly believed.

But that inflammations in the circumjacent parts may affect the ſtomach in the like manner, is very evident; and in the ſame manner as we ſee inflammations of the external parts ſpread largely from one place to another. It is therefore no wonder, in a perſon dead of an inflammation of the liver, diaphragm, or other parts, if we find the ſtomach inflamed, or even gangrenous, of which many inſtances are furniſhed by Bonetus.

Things acrid taken into the ſtomach.] Daily experience ſhews us there are many acrimonious ſubſtances which the human ſtomach is able to bear without much damage, of which many are reckoned up by Dr Swalve, in his elegant treatiſe *De querelis ventriculi*. For many things that will injure the fauces by touching them with their acrimony, are received into the ſtomach without giving it any remarkable uneaſineſs. The ſtrongeſt ſpices, pepper, ginger, and the like, barely reſtore the ſtomach to its uſual warmth

[b] Opuſc. Pathol. Pract. decad. 2. differt. 7. p. 466.

and appetite in gluttonous and ſottiſh perſons; and even ſome of the more cauſtic ſort, as the bulbous roots of *arum*, beat and mixed up with other remedies in form of pills, are often given without complaint. The cauſtic juice of ſpurge is ordered by Hippocrates [m] to be ſoaked up by figs; and thoſe figs he gave to his dropſical patients before their meals. On the contrary, there are many acrimonious ſubſtances, which, not being wrapped up in any ſubſtance to correct or guard them, ſoon corrode the ſtomach, excite the moſt excruciating pains and dreadful convulſions, with an inflammation of the very worſt kind. Even if the ſtomach be found much inflamed, or corroded, in opened bodies, ſuſpected of a violent death by a court of inqueſt, phyſicians generally with good reaſon give their opinion for ſome ſharp poiſon taken by the deceaſed. Wepfer [n] relates many caſes that ſerve as a confirmation of this truth. There are again other acrids, in which no ſenſible acrimony appears; and yet by a latent and local ſtimulus, that is hardly any way corrigible, will excite an inflammation in the ſtomach, after the moſt violent convulſions. Such a caſe Hofman [o] relates to us, in which eight grains of the glaſs of antimony were given in ſubſtance; from whence violent convulſions, with the moſt acute ardent pains, were excited, and ended in death. The lower part of the ſtomach was found inflamed in this body, and the glaſs of antimony was plainly perceived ſtill adhering in form of powder to the innermoſt coat of the ſtomach.

Moreover it has been obſerved, that an acrid matter depoſited in the ſtomach, whether it were generated in the body, or conveyed thither by ſwallowing, will excite there the worſt inflammations, and often produce a fatal gangrene. Helmont [p] opened the body of a man, who died of the plague, within ſeven hours after being invaded by the diſtemper, under continual vomitings and a violent head-ach; but there he

[m] De Victu Acutorum, in fine. Charter. Tom. XI. p. 183. [n] De Cicutæ Aquat. Hiſtor. cap. 21. p. 274, *&c.* [o] Fred. Hofm. Opuſc. Pathol. Pract. dec. 2. diſſert. 7. p. 456. [p] Tumulus Peſtis, p. 842, 843.

he found the mouth of the ſtomach burnt up, with a black or gangrenous eſchar. In another body, deceaſed within ſeventeen hours of the plague, he found the ſtomach perfectly eaten through in three places by gangrenous eſchars [q]. Alſo the obſervations of the great Dr Sydenham, mentioned before upon another occaſion (§. 634.), ſeem to perſuade us the peſtilential contagion often firſt roots itſelf into the ſtomach, if it be not timely exhaled from the body in a ſweat, before it has drawn the ſtomach into a violent ſtate of inflammation: for in a peſtilential fever, great anguiſh with perpetual vomiting attended, which ceaſed as ſoon as a copious ſweat broke out upon the body; and went entirely off, if the ſweat was continued long enough to exhale the infection received. Sometimes even the worſt kind of meaſles and ſmall-pox, but more rarely the former, will be attended with ſuch ſymptoms as threaten a dangerous inflammation of the ſtomach: and therefore anguiſh about the præcordia, with vomiting and burning heat, after an eruption of the ſmall-pox, afford a very ſuſpicious ſign; for there is then danger leſt the variolous puſtules ſhould break out upon the ſtomach itſelf, and produce in it a violent inflammation. The ſame conſequence has been alſo obſerved by Dr Hoffman [r] to follow from the matter of the gout, no longer depoſited upon the extremities, or driven from them by imprudent treatment.

§. 952. BUT a phlegmon of the ſtomach is commonly fatal in a ſhort time, unleſs it be ſpeedily removed: and this partly from the neceſſary office of the ſtomach itſelf injured, and in part from the infinite number of nerves with which it is connected.

What a neceſſity there is for a plentiful uſe of diluent medicines for the cure of inflammations, has been largely ſhewn under the preceding maladies;

[q] Ibidem, p. 867. [r] Loco modo citato, p. 460.

but the ſtomach itſelf being inflamed, is irritated to reject even the lighteſt liquors, and of courſe the neceſſary diluents cannot be this way conveyed into the body. And beſides this, the ſubſtance of the ſtomach being extremely nervous, a pain and irritation by an inflammatory ſwelling there may put the whole body into great diſturbance in a ſurpriſing manner, and more eſpecially injure the functions of the brain "For (as Galen[s] very well obſerves) the ſtomach ſends "its diſorders to the head, and the head remits its "complaints to the ſtomach, by means of the very "large or conſiderable nerves that go down from the "encephalon to the mouth of the ſtomach; from "whence too it is that this part has a more exqui-"ſite ſenſe than what is obſerved in any of the other "parts of the body." See what was before ſaid upon this ſubject at §. 701, where we treated upon a Febrile Delirium ariſing from filthy or corrupt ſordes lodged about the præcordia. But that the vital powers themſelves muſt flag or ſink from the ſame cauſe, was ſhewn before at §. 661: and Celſus[t] obſerves, that a contuſion of the ſtomach is not only followed with an hickup and bilious vomiting, but all things taken are immediately rejected, the pulſation of the arteries becomes languid, watery or faint ſweats ariſe, and the extremities of the body grow cold; all which are ſigns of approaching death. It is thus, therefore, eaſily apparent, that the higheſt danger attends the preſent malady.

§. 953. A PHLEGMON of the ſtomach, like an inflammation in the other viſcera, uſually terminates either in a healthy reſolution, or a morbid ſuppuration, a ſcirrhous, cancerous, or gangrenous complaint; or elſe it brings on death ſpeedily with convulſions, before theſe can enſue.

Concerning the various endings of inflammatory maladies that invade the viſcera, we have before ſeveral

[s] De Locis Affectis. lib. iii. cap. 9. Charter. Tom. VII. p. 438, 439. [t] Lib. v. cap. 26. n° 15. p. 287.

ral times insisted; and it appears, that all the same consequences may obtain in the present organ inflamed.

However, an inflammation of the stomach has this peculiarity, that it often kills very suddenly, by exciting the most violent convulsions. It appears from the repeated observations of Wepfer [u] and others, that while acrimonious poisons corrode and inflame the stomach; or even when the nerves of the stomach are irritated by substances in a particular way, without such a poisonous acrimony; the most dreadful convulsions will follow in both cases. Daily observations in practice assure us, that infants die very suddenly with convulsions from the sour remains of their milk offending the stomach; but the remarkable case following [w] shews plainly what terrible complaints attend an inflammation in the stomach: for, in a youth of a good habit or constitution, the pulse was sunk or depressed within the first two or three hours of the malady, and even became often intermittent; and although he was soon after three times blooded, yet his extremities fell into a cadaverous coldness, an extreme giddiness and blindness followed, with a fierce delirium, and an insupportable sense of burning inwardly; the muscles of his face were convulsed, his thirst was excruciating, and the sight of drinks was so horrible to him that he behaved almost like a person hydrophobous. The symptoms however abated by use of the lancet; and their return again soon after was repulsed by the same remedy: so that, after eleven blood-lettings, he at last escaped clear of so desperate a malady.

§. 954. AS soon as a phlegmon appears in the stomach by its proper signs (§. 951.), it must with the utmost diligence be immediately treated by very profuse blood-lettings, repeated conformable to their urgency; to which add a drink that is very light, soft, and nourishing, prepared from ingredients that are emollient, antiphlogistic

[u] In Historia Cicut. Aquat. passim.

[w] Medical Essays, Vol. I. n° 29. p. 284.

phlogiſtic or cooling, and contrary to the productive cauſe of the phlegmon; and in the mean time make a good uſe of clyſters and fomentations of the ſame ſort: but you muſt be extremely careful to avoid every thing that is acrid, more eſpecially vomits.

That copious blood-letting is the principal remedy in the beginning of inflammations, was before often ſhewn, as well under the cure of general Inflammation, as in the local inflammatory maladies that we have hitherto conſidered; and the particular caſe laſt cited plainly ſhews the important uſefulneſs of repeated veneſections in the diſtemper before us, ſurrounded with ſo many dreadful ſymptoms. We have likewiſe ſufficiently applauded the uſe of diluent drinks, with the addition of nitre, honey, rob of elder-berries, and the like. But here there is a greater difficulty, to avoid irritating the inflamed ſtomach by the leaſt acrimony, whereby all the ſymptoms might be increaſed; and therefore, although theſe remedies are with ſo much reaſon applauded for the cure of inflammation, we hardly dare adminiſter them; or at leaſt they muſt be given in a manner ſo much diluted, that, if dropt into one's eye, they would give it no offence by acrimony. A lenient drink of this ſort is propoſed in the Materia Medica at the number of the preſent aphoriſm; which yet is by the wood-ſorrel and currant-gelly rendered too ſharp for the ſtomach to bear when it is under a violent and moſt painful inflammation; however, the yelk of a freſh egg will generally here obtund the acrimony of the other ingredients, enough to render it ſupportable. But the freſh made whey of new milk, with the decoctions of barley, oatmeal, or bread, and the like, with the yelk of a freſh egg, will afford all the nouriſhment that may be here required. A weak chicken-water, or decoction, is alſo very ſoft or light, and will very well bear ten or twelve grains of nitre to be diſſolved in each pint of the clear liquor. But another point is alſo to be regarded here, namely, to give it the patient in ſuch very ſmall quantities at

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a time as may not oppreſs or offend his ſtomach, from whence all his complaints might be increaſed: but if the cauſe be known which by its acrimony corrodes and inflames the ſtomach, remedies of an oppoſite diſpoſition to the ſaid acrimony are to be given; as for example, earthy abſorbents, with oleaginous and ſaponaceous medicines, for the acid acrimony in the ſtomach of convulſed infants, which both ſoothe the pain and weaken the acrimony at the ſame time.

But ſince here we are unable in a ſhort time to convey any great quantity of liquors to the blood for diluting and attenuating, therefore other ways are alſo at the ſame time to be attempted. With this view, then, warm-bathings, fomentations, epithems, and eſpecially clyſters often repeated and long retained, are uſefully applied, to be drank in by the mouths of the bibulous veins.

Now it is hence very apparent what an increaſe of all the complaints muſt enſue by filling the ſtomach in this caſe with the ordinary medicines uſed in vulgar practice, which for the moſt part recommends ſpirituous, bitter, and hot ſpicy things, that are of good uſe only for a cold diſtemper of the ſtomach. The caſe goes ſtill worſe with ſuch a patient as unhappily falls under the rule that ſome phyſicians eſtabliſh and follow; namely, "That a vomiting is to be cured by vo-"mits," (ſee §. 659.). For ſuch perceiving that every thing taken in is again immediately rejected, they directly conclude a malignant foulneſs is lodged in the ſtomach as the cauſe of the malady, and therefore attempt its expulſion by giving vomits. Even Sydenham candidly confeſſes (ſee the citation from him at §. 634.) he had been led into this miſtake, from obſerving ſo good effects from the uſe of emetics in the beginning of autumnal and epidemic fevers, where, after blood-letting premiſed, theſe ſeaſonably removed the anguiſh with the ſickneſs and reaching; but this practice he found was attended with the very worſt conſequences in peſtilential and ardent fevers, that began with an inflammation upon the ſtomach. The late celebrated Dr. Hofman relates a notable caſe, that points out the

the miſchievous effects of vomits in ſuch a phlegmon of the ſtomach [x]. A prelate of Halberſtadt, in perfect health, fell into a moſt ardent fit of anger and concern at ſome affairs; from whence, with the drinking of heated wine, he was upon the following day afflicted with extreme pain and anguiſh about the præcordia, reachings to vomit, and a burning heat in his ſtomach: the phyſician called to him adminiſtered an emetic prepared of the golden ſulphur of antimony, which obliged the patient to vomit thrice, but with a great increaſe to all his complaints, and within ten hours after he expired with convulſions. Upon opening the body, ſeveral gangrenous ſpots appeared in the bottom of the ſtomach, partly red, and partly black: ſo that the inflamed parts, by ſuch rough ſhocks and compreſſures in the ſtrainings to vomit, were now converted into a gangrene.

§. 955. IF ſuch a phlegmon of the ſtomach comes to ſuppuration, numerous miſchiefs enſue; more eſpecially ſickneſs, with reachings, vomitings, and pains; which, when the cauſe is not known, ſeem very ſurpriſing, and are rarely well cured: but, when the malady is once known (§. 951.), its ſymptoms require to be treated under the ſame method of cure (§. 402, to 413.) that was before given for an Abſceſs.

Although the cure of an inflammation is always the moſt deſirably to be performed by a mild reſolution or removal of its productive cauſe; yet this is not always practicable, either from the magnitude or violence of the phlegmon itſelf, or from unhappibly neglecting to give timely the proper treatment which the malady requires in its beginning: in conſequence of which, therefore, a ſuppuration enſues; which is indeed a much better and more deſirable way of terminating the phlegmon than any of the others that are now left for it. But ſince, at the time when a ſuppuration

[x] Opuſc. Patholog. Pract. decad. 2. diſſert. 7. p. 454.

puration is forming from a phlegmon, all the ſymptoms increaſe (ſee §. 387.) it is evident enough with how many urgent evils the patient muſt grapple while a ſuppuration is forming in the ſtomach. For then, after ſupporting the malady for ſome time, there follows a purulent vomiting, often intermixed with a good deal of blood from veſſels ruptured or eroded, by which diſcharge the ſymptoms are relieved; although ſometimes, the ſtomach being quite eaten through by the ulcer, an inceſſant hæmorrhage and death directly follow. There is a caſe of this kind related to us in the *Mem. Acad. of Paris* [y], of a man who had been troubled with a continual pain in his ſtomach for three weeks; he had a heart-burn or cardialgia, with frequent ſickneſs or reachings, and in the latter days of his life diſcharged much blood both upward and downward. After the death of this perſon, the celebrated Littre found a round ulcer in the ſtomach, of a quarter of an inch in diameter, and half the 12th of an inch in depth, ſeated within an inch and half of the pylorus: and he found a great quantity of blood extravaſated into the ſtomach and inteſtines. Sometimes an ulcer of this ſort, by cauſing the ſtomach to grow to the peritonæum, opens outwardly, and leaves a fiſtula, through which ſome parts of the aliments eſcape during the life of the patient. I viſited a woman of threeſcore, who had ſupported ſuch a fiſtulous ulcer for twelve years, without any great damage to her health: and I obſerved, that the contents of the ſtomach came out in part through the opening of this fiſtula. But a caſe much more wonderful is to be read in the Journal of the Learned [z], of a girl, the contents of whoſe ſtomach diſcharged themſelves through the opening of an abſceſs in the left hypochondrium, together with ſome carious fragments of the ribs: the diſcharge was here even ſo copious and ſudden, as obliged her to be feeding almoſt every quarter of an hour, to ſatisfy her hunger and great weakneſs; and if the very ample opening of this ulcer

[y] L'an. 1704. p. 36. [z] Journal des Scavans, mois d'Aout, 1737. p. 534.

cer was not closed by suitable compress and bandag all the nourishment that was taken in immediate flowed out through it. But by degrees the openi of this ulcer afterwards contracted itself, and she su vived it a long time, in such good strength as to u dergo the labours usual in a country farm; in whic manner, she supported her malady for the space twenty three years.

If the signs of a violent inflammation in the stomac have gone before, bad enough to give a reasonab suspicion of a vomica or abscess in the stomach, a emollient decoction of marsh-mallows, greater con frey roots, linseeds, *&c.* are to be given often, and i very small draughts, to soften the vomica, and pro mote or expedite its rupture into the stomach: an when the purulent discharge either upward or dowr ward, followed with a relief of the symptoms, sho that the abscess is broken, it must then be treated fir with the mildest detergents or cleansers, and after wards with the necessary consolidants or healers; a we before advised for the Cure of an Abscess, at th numbers referred to in our text. But while such a ulcer is healing, care must be taken not to load th stomach with much or with solid nourishment; b which the parts will be drawn asunder rather faste than they were closed. But it appears plainly enough that the cure must be here very difficult, since the ul cer will perpetually be watered with every thing tha is swallowed, and likewise be constantly agitated b the peristaltic motion of the stomach: for which rea sons nothing but flesh-broths, boiled with rice, barley bread, *&c.* can be here used, although nourishing cly sters may perhaps well enough sustain the patient' strength for some days, when the ulcer is cleansed that, by giving rest to the stomach, it may be the soon er consolidated.

§. 956. IF the phlegmon generates a schirrhus or a cancer, of the stomach; by those it excites the most excessive vomitings, and into-

lerable

lerable pains; which become exaſperated by every thing taken into the ſtomach, even in the leaſt quantity: which complaints are rendered fixed, longer laſting, or more roughly conditioned, from all medicines.

Another way of terminating an inflammation is here propoſed to us, of which we have treated ſeveral times already under the maladies preceding. Many patients of this kind offer daily to the phyſician's care, who would think themſelves happy if they did not lie under a daily neceſſity of taking nouriſhments; for theſe give them the moſt troubleſome pains of the ſtomach, either immediately upon taking them, or elſe within an hour or two after their repaſt: and inſtead of receiving any relief from the moſt boaſted ſtomachics, their pains become increaſed, as they alſo are from every thing ſharp or ſtrong taſted; but are rendered the worſt of all by rough emetics and purgatives. I have viſited ſeveral of theſe miſerable perſons, who, impatient of their pains, have, within ſome hours after eating, put their finger into their fauces to vomit all up and give a relief to their anguiſh. But in all ſuch caſes we have good reaſon to ſuſpect a ſchirrhus or cancer in the ſtomach, or in ſome of the parts adjacent; the truth of which is confirmed by the opening of the deceaſed bodies. Some years ago I ſaw an Engliſh lady afflicted with ſuch a malady; and conſulted for her, with my very good friend Dr Godfrey du Bois, profeſſor of phyſic and philoſophy in the univerſity of Franequer, (whoſe untimely death I much lament), in order to relieve the miſerable complaints with which ſhe had been afflicted for ſome years. But all endeavours were here fruitleſs; and ſhe could only gain ſome temporary reſpites, by the ſofteſt medicines, with opiates. When her body was opened, the ſtomach appeared no larger than a gooſe-egg; but the pylorus, with the next part of the duodenum, and pancreas continued from it, were become ſchirrhous, and extremely hard. In the body of a man who had been long afflicted with pains of the ſtomach, joined

with vomitings and faintings, the celebrated Ruyſch[a] found a ſchirrhous ſwelling in the bottom of the ſtomach, almoſt as large as one's fiſt, which was inwardly filled with a tenacious and black-coloured matter, like that which he diſcharged by vomiting a few hours before he expired. Many of the like ſort may be ſeen in Bonetus[b].

Now ſuch a ſchirrhus, ſo long as it continues in a mild or dormant condition, may produce numberleſs miſchiefs by the weight, preſſure, and diſtraction that it makes upon parts ſo extremely nervous or ſenſible: but when in proceſs of time, or by the uſe of ſharp medicines, it ſhall have acquired a degree of cancerous malignity, dreadful pains ariſe thence; as may be eaſily conceived from the reaſons before given where we treated profeſſedly upon a ſchirrhus and a cancer. A remarkable caſe of this nature is deſcribed by the celebrated Petit[c]. In a woman ſeized with pains and a fever, ſickneſs and vomitings attended, with a colicky pain: but by repeated blood-lettings, and other ſuitable medicines preſcribed by a very ſkilful phyſician, ſhe gained ſome relief; but neglected the remains of her malady not yet clean extirpated, and ill obſerved the rules of her diet. Remaining long in ſo languiſhing a condition, ſhe at laſt conſulted a quack-practitioner, who by ſtrong emetics and the ſharpeſt clyſters (the laſt being rendered more acrid from mild ones at firſt uſed) reduced this unfortunate patient to the moſt miſerable condition. Afterwards, taking better advice, ſhe gained ſome relief; but at length periſhed of her malady. Upon opening the body, part of the ſtomach was found firmly cohering with the adjacent large inteſtine called the *colon*, and was there together with that grown into a large ſchirrhous ſubſtance: upon cutting open the ſtomach, appeared a very fetid and black-coloured ulcer of two inches in diameter, and which, growing to the integuments along with the ſaid ſchirrhus, endeavoured to make a way

[a] Obſervat. Anat. Chirurg. obſ. 39. p. 38. Pract. lib. iii. ſect. 7. p. 68, &c.

[b] Anatom.

[c] Academ. Royale des Sciences, l'an 1716. Mem. p. 395, &c.

way outward for the diſcharge of its ichorous matter. Many particulars worthy of obſervation are ſuggeſted in this hiſtory; but what is here related ſuffices to ſhew that a ſchirrhus of the ſtomach may degenerate into a cancerous ulcer.

§. 957. SUCH a ſchirrhous or cancerous malady can only be kept under by the moſt lenient remedies, ſuch as we formerly adviſed for relieving the like diſorders (§. 490, 491, and 506 to 512.): but a cure is here rarely to be effected; altho' the waters of the mineral ſpaws are extremely efficacious towards that intention in theſe complaints.

Every thing that was formerly recommended for the cure of a Schirrhus and Cancer, under the above-cited aphoriſms, will be here of ſervice; excepting what relates to the local applications for ſchirrhous or cancerous complaints ſeated in external parts of the body, which the nature and ſituation of the ſtomach will not admit.

The principal relief is in the avoiding of every thing, both in diet and medicine, that may irritate or exaſperate the complaints: fleſh-broths boiled with rice and emollient pot-herbs are here the chief nouriſhments; alſo the yelks of eggs, with the cream from barley or oat gruel, given in ſmall quantities at a time; from whence great relief is often perceived in theſe painful and chronical maladies of the ſtomach. But where a ſchirrhus of theſe parts is recent, a courſe of Venice ſoap, plentifully uſed, has been found of ſervice, provided the patient takes to the amount of two drams every day for ſeveral months; for this is the higheſt reſolvent, and likewiſe tolerably mild: which yet muſt be immediately laid aſide, if the pains or vomitings increaſe upon taking it into the ſtomach; for we have then reaſon to fear the ſchirrhus is already degenerated into the nature of a cancer, which will not bear this medicine. The medicinal ſpaw-

waters, that have no great acrimony, and abound with an extraordinary reſolving power over concretions or indurations in the animal-body, will be here alſo ſerviceable.

From what has been ſaid, it plainly enough appears, what prudent caution is neceſſary in the treatment of theſe chronical pains of the abdomen which become exaſperated by aliments taken into the ſtomach.

§. 958. FROM what we have hitherto propoſed (§. 914 to 958.), the diagnoſis, prognoſis, origin, nature, effects, palliation, and cure of a like inflammation, ſuppuration, gangrene, ſchirrhus, or cancer, of the ſpleen, pancreas, and omentum, may be evidently derived.

We come now to the conſideration of ſeveral other inflammatory maladies that ſtill remain, in other viſcera of the abdomen related to the portal ſyſtem. And here all that we have before advanced might be again repeated. For the phlegmon here only takes up a different ſeat or reſidence; and if the ſituations or deſcriptions of the parts themſelves be firſt well known from anatomy, and their functions as well underſtood from phyſiology, there will be no difficulty in forming a diagnoſis of theſe complaints. All the ways therefore of terminating an inflammation, may here again take place; and their treatment likewiſe will require to be conducted after a ſimilar manner. It may then ſuffice in this place only to ſurvey in few words the principal differences which authors of the beſt credit have in theſe points remarked. But concerning an inflammation of the Bowels or Inteſtines, we ſhall afterwards treat profeſſedly, in a diſtinct chapter, becauſe in that malady there are many particulars to be obſerved which relate to thoſe parts only; and for the ſame reaſons we ſhall alſo treat ſeparately of a Nephritis or Inflammation in the Kidneys.

Of the ſpleen.] Diſtempers of the ſpleen are very often mentioned to us by the ancients; but with ſuch circum-

circumſtances as afford good reaſons to ſuſpect they have ſometimes deſcribed the diſtempers of other parts likewiſe under this title. For the left flexture of the colon lies immediately contiguous and beneath the ſpleen; from whence indurated fæces, and flatulencies obſtructed by them, may occaſion pains and ſwellings in the region of the ſpleen, although there may be no fault in the ſpleen itſelf. Thus Trallian [d] writes concerning *an inflation of the ſpleen;* and for the cure of that malady recommends carminative remedies, which have a very remarkable efficacy for diſperſing flatus: but it is eaſily apparent, that the capacity of the ſtomach and inteſtines are the only proper ſeats of flatulencies. And thus even the cauſe of thoſe acute pains which are by Hippocrates [e] ſaid to ariſe up to the ſide, breaſt, ſhoulder, and clavicle, from the exceſſive uſe or gorging of green figs, apples, grapes, new wine, *&c.* is by that great author laid to the door of the ſpleen. But we know all thoſe eatables are very flatulent, or inclined to a fermentation that breeds air, by which they offer injury to the ſtomach and inteſtines before they can get into the blood to affect other parts; and for that reaſon Hippocrates [f] recommends for the cure, ſuch things as evacuate the offending matter both upwards and downwards. Moreover, he obſerves, that within the ſame day the ſpleen will be both great or ſwelled, and afterwards contracted leſs again; that it alſo occaſions, during the firſt ſtate, a moſt acute pain; but after the ſwelling is become ſoft or has ſubſided, there is no pain. But it is apparent enough, that the ſpleen being obſtructed or inflamed, can be ſubject to no ſuch ſudden changes; although the colon, in that part of it which lies contiguous with the ſpleen, may often enough be the ſeat of thoſe flatulent tumours, which ſuddenly appear, and as ſuddenly ſubſide. If again we conſider, that the ancients often mention ſchirrhoſities of the ſpleen very quickly

d Lib. viii. cap. 11. p. 479. vide et Galen. Medend. Method. ad Glaucon. lib. ii. cap. 7. p. 379. Charter. Tom. X. e De Internis Affectionibus, cap. 27. Charter. Tom. VII. p. 657. f Ibidem. cap. 34. p. 662. et cap. 35. p. 663.

cured, and that ſome of the moderns do the ſame; there will be hardly any room to doubt but thoſe hard ſwellings aroſe from indurated fæces lodged at the ſplenic flexure of the colon; ſince a ſchirrhus cannot be ſo ſuddenly removed, but for the moſt part even ſtubbornly withſtands the moſt powerful remedies, as all who are verſed in practice too well know.

Again, as it was the opinion of the ancients that the ſpleen made a ſtorehouſe of atrabiliary humours, therefore they were induced to deſcribe melancholic diſorders under the title of Affections of the Spleen; to which head they alſo referred the ſcurvy, as we ſhall ſhew more plainly hereafter, when we come to treat of thoſe maladies.

But in the mean time it cannot be denied, that the ſpleen is ſometimes invaded with an inflammation; ſince from the opening of deceaſed bodies it is plainly ſhewn, that the effects of inflammation have been obſerved in the ſpleen: but Trallian[g] has well remarked, that the ſpleen is leſs liable to inflammation than the other viſcera. But the principal ſigns of an inflammation in the ſpleen are, an acute continual fever, with a pain in the region of the ſpleen, extending up ſometimes as high as the ſhoulder, breaſt, and clavicle, of the affected or left ſide. Now although it is uſual for the injured function to point out the parts affected in diſtempers, yet as the ſpleen appears to be only a ſubſidiary appendage for the ſervice of the liver, we are therefore not here able to collect any accurate ſigns from an injured function, becauſe the injury of the ſpleen is but ſlowly and weakly transferred to ſhew itſelf by injuring the liver. For anatomical experiments upon living animals teach us, the ſpleen may be intercepted from its office by a ligature upon its veſſels, or may be even wholly cut out, and yet the beaſts will afterwards ſurvive long enough, without ſigns of great damage to their health[h].

It ſeems not improbable that ſometimes an inflammation of the ſpleen is taken and treated for a pleuriſy,

[g] Lib. viii. cap. 12. p. 484.

[h] Malpig. de Liene, cap. 6. p. 114. Brunner. de Pancreate. In Praefat. p. 9.

risy under that denomination; and commonly with no great damage, as the cure of a pleurisy is likewise suitable for that of an inflammation of the spleen. The celebrated Dutch physician of the Hague Dr Antony de Haen, (to whom I gratefully acknowledge myself indebted for the communication of many useful and practical observations taken from the opening of deceased bodies) has among his other cases sent me one that serves to confirm the present opinion. A man, aged thirty-four years, was treated by his physician for the cure of a pleurisy; and with such success, that the fever and pain of his left side were so far reduced by the second day of the malady, that the patient thought himself almost entirely cured, and neglected to observe any further cure or regimen, but with an event that at last proved fatal to him: for he lived afterwards in a languishing condition, and confessed he always perceived an obtuse pain in the part that was first affected. Within a few weeks after his first illness he had a considerable swelling in his right leg, that again disappeared of itself; and another of the like sort shewed itself after that in the right side, and of a considerable magnitude, which again spontaneously disappeared. Lastly, a like tumour appeared in the left thigh; and while it there continued, another swelling formed itself upon the inner side of the right arm, being soft, and larger than one's fist. At length succeeded a dysentery, an ascites, and anasarca, with weakness, and death.

At the opening of the body of this man after death, were observed the following appearances: The abdomen was swelled, and every where livid, but more especially on the left side; the omentum was very short, hardly two inches long, and without fat. All the intestines were extremely turgid, and inflamed throughout their whole extent, both large and small ones; and in several places they were gangrenous; nor was there any considerable quantity of lymph within the capacity of the abdomen. The stomach also was very turgid, and for a large part gangrenous in the upper and left portion of it; the pancreas small and flaccid; the

the meſentery bloodleſs, but entire; in the meſocolon appeared a great many ſmall friable bodies of a dark greeniſh colour, in bulk, figure, and appearance very much reſembling the buds of capers, as they are uſually ſerved, pickled in vinegar, to the table. The liver was extremely large, and in its lower part of a darker brown colour than is natural. The ſpleen was in its lower part concreted to the peritonæum, full of a thick, white, and abundant matter; there was alſo a great quantity of like matter which floated in the water of the abdomen. The tumour of the arm being opened by a lancet, appeared full of the like matter, both as to colour and conſiſtence, with what was obſerved before in the ſpleen. The lungs in ſeveral places cohered with the pleura.

This whole hiſtory informs us, that an inflammation of the ſpleen, being by the neglect of the patient not completely cured, degenerated into a ſuppuration; and that the matter thence abſorbed was by various tranſlations, or metaſtaſes, depoſited upon divers other parts, until at length the whole maſs of blood was corrupted with a purulent cacochymia. We are alſo to obſerve, the bulk of the liver was here more than uſually increaſed, becauſe the ſpleen was now waſted and its function aboliſhed by a purulent tabes; which is alſo what Malpighi and Brunner have obſerved in animals that have had their ſpleen cut out, or rendered uſeleſs by intercepting the veſſels thereof by ligatures.

But Hippocrates[i] ſeems alſo to have obſerved a ſuppuration of the ſpleen; for when the ſpleen is very large and ſwelled outwardly, he orders to open it, by cauteriſation, for the diſcharge of its matter, as he had before adviſed for a vomica or abſceſs in the liver. And in another place, before cited from him, at §. 488, in treating upon ſplenic maladies, he obſerves, that the diſtemper ſometimes degenerates into a dropſy, and the patient goes into a conſumption; whereas thoſe have been cured, who have had the ſuppurated ſpleen opened by cautery; but that ſometimes thoſe

i De Internis Affectionibus, cap. 32, 33, 34, 35. Charter. Tom. VII. p. 662—665.

thoſe who have the great or ſwelled ſpleen hard or ſchirrhous, live to an advanced age. Nothing can give a better invitation for phyſicians to make diligent reſearches into the writings of the ancients, than the repeated lights which their obſervations reflect upon the moſt difficult caſes; ſince it is experienced, that hardly any thing difficult or doubtful can occur in practice, but they have ſomething to ſay upon it. We ſee in this laſt caſe, or hiſtory of a phlegmon in the ſpleen, there was a fatal ſuppuration followed, contrary to the patient's expectation, who believed himſelf well: but this is what Aretæus has fairly obſerved to us, when in treating upon the preſent malady he ſays, *But the ſigns of an enlargement in the ſpleen are, fevers, pains, and ſhiverings, which frequently remit; for after a ſhort fever-heat, with a cold chill and pain, the diſtemper ceaſes for a time: and from this cauſe or malady an abſceſs ſometimes lies concealed within the ſpleen; which even in its healthy ſtate is a very pulpy or tender viſcus, and almoſt void of ſenſation* [k]. But the event or termination of the preſent malady is remarked by Hippocrates, where he ſays, *Thoſe who have a diſeaſed or ſuppurated ſpleen, are invaded with a dyſentery; and after a long-continued dyſentery follows a lientery, or a dropſy, which carries off the patient* [l]. Yet ſoon after he pronounces, *a dyſentery to be ſerviceable, when it ſucceds a diſeaſe of the ſpleen* [m]. But we know matter lodged in the ſpleen may gain a ready paſſage into the liver by the ſplenic vein; and we have already ſeen (at §. 950.) that a copious dyſentery which ſoon terminates, happily carries off diſtempers of the liver. Theſe two prognoſes are again more diſtinctly to be read in his Coan Preſages,

k Incrementi autem notæ ſunt febres, dolores et horrores: multoties enim remittunt, poſt brevem autem calore rigore et dolore vacant: hac de cauſa interdum in ſplene abſceſſus latuit: rarum enim et ſenſu carens etiam in ſanitate viſcus. *De Cauſis et Signis Morbor. Diuturn. lib.* i. *cap.* 4. *p.* 43

l Qui lienoſi dyſenteria corripiuntur, iis, oborta longa dyſenteria, hydrops aut lienteria ſuccedit, ac intereunt. *Aphor.* 43. *ſect.* vi. *Charter. Tom. IX. p.* 275.

m Lienoſis dyſenteria ſuccedens bonum. *Aphor.* 48. *ſect.* vi. *Ibidem, p.* 281.

ſages, thus: *A ſhort dyſentery is profitable in ſplenic maladies; but one of long continuance is bad, for when this laſt ceaſes, if a dropſy or lientery enſues, the diſtemper is fatal* *.

But a ſchirrhus of the ſpleen is what we ſtill much oftener meet with in practice than an abſceſs; for which reaſon Aretæus has pronounced it the ſocial or familiar diſtemper of the ſpleen [n]. Now ſuch an hard tumour by its weight and preſſure may greatly injure or diſtract the circumjacent parts, and excite the moſt violent pains. The celebrated Ruyſch c found a ſpleen, in the body of a woman, that was eight times larger than it ought naturally to be; for by its weight, which was in a pair of ſcales found equal to four pounds, it had deſcended even into the pelvis. I have myſelf twice ſeen ſpleens that were ſo ſchirrhous, and much enlarged, as to prolapſe down into the pelvis; and there are a number of the like caſes collected together in a treatiſe on the ſubject by Drelincurt [p]. Nor is it ſo ſurpriſing that the ſpleen, having increaſed its bulk and weight, ſhould by its own gravitation inſenſibly elongate the veſſels downwards, ſo as to deſcend to the bottom of the abdomen; ſince more rare obſervations have ſhewn us it may alſo aſcend, or be thruſt up into the thorax: for in this condition it was found by De la Motte [q], in a man that became dropſical, after an intermitting fever of long continuance. In the deceaſed body of this patient, the ſpleen, being greatly enlarged in bulk, had thruſt up the diaphragm in the left ſide after ſuch a manner, that there was but a ſmall ſpace left betwixt the ſpleen and the arm-pit. But when the ſpleen alſo dwindles or leſſens in bulk as it hardens, the malady is then probably with more eaſe ſupportable. In a man of threeſcore (who never had complained of any pain or other malady that could give a reaſonable

* Dyſenteria non longa ſplenicis utilis: longa vero, mala: deſinente enim ſi dydropes aut lienteriæ fiunt, lethale.

[n] De Cauſis et Signis Morbor. Diuturnor. lib. i. cap. 4. p. 43. [o] Obſervat. Anatom. Chirurg. obſ. 62. p. 58. [p] Diſſert. Anat. Pract. de Lienoſis, cap. 17. Opuſc. Omn. p. 768. [q] Traite complet de Chirurgie, Tom. II. p. 169, 170.

able expectation for any conſiderable alteration in the ſpleen) the celebrated M. Littre [r] found the ſpleen entirely petrefied, but of no greater weight than an ounce and half; and yet this man died of a violent death; ſo that he might probably have longer ſurvived this ſtate of the ſpleen.

But when a ſchirrhus of the ſpleen degenerates to a cancer, it then eats away all the parts around it; and after inſupportable torments, having corroded the larger veſſels, it produces an hæmorrhage that is ſuddenly fatal. Such a fatal hæmorrhage, which diſcharged itſelf by ſtools, was obſerved by Drelincurt [s] the elder, in a woman whoſe cancerous ſpleen had corroded through the ſubjacent colon.

Of the pancreas.] As this large ſalival gland lies extended betwixt the two plates of the meſocolon, with one end of it cohering or opening into the duodenum, where the inteſtine is incurvated and continuous with the pylorus, from whence it reaches tranſverſly, and behind the ſtomach, almoſt to the ſpleen, in which courſe a part of the duodenum interpoſes betwixt the pancreas and vertebræ of the loins; therefore, it is apparently very difficult to diſtinguiſh diſorders of the pancreas, ſince it is not ſo eaſily rendered the object of our touch as the ſpleen, and whenever it is ſwelled muſt of neceſſity compreſs the ſtomach and duodenum. Therefore an inflammation of the pancreas may ſometimes be eaſily confounded with a like malady of the ſtomach or duodenum; but then no damage can acrue to the patient from ſuch a miſtake, becauſe they all require to be treated after the ſame manner for a cure. But ſince the uſe of the pancreas is to ſeparate a liquor from the blood, that very nearly reſembles the ſaliva, which it pours into the duodenum; therefore an injury following in the function of this organ cannot be ſo ſuddenly perceived, as to derive thence any diagnoſtic ſigns of ſuch a malady being preſent. For it was by mere experiments that the celebrated Brunner was directly able to

[r] Academie Royale des Sciences, l'annee 1700. Hiſt. p. 50. [s] Diſſert. Anat. Pract. de Lienoſis, cap. 14. Opuſc. Omn. p. 763.

to confute the idle Sylvian hypothesis of a fermentation or effervescence, betwixt the bile and pancreatic juice, mixing together in the duodenum; to the due performance of which effervescence the Sylvian party ascribed almost the whole business of chylification, and derived the origin almost of every disease from the same spring. It appears also from the same experiments that refuted Sylvius, that the function of the pancreas being intercepted, by destroying or tying up its duct, or by cutting out the principal part of it, (since an entire extirpation of the whole is impracticable without killing the beast), yet the dogs survived the operation without any notable damage to their health [t]. But that all tumours of the pancreas, inflammatory, suppurative, schirrhous, or cancerous, may dreadfully affect the communicating or adjacent parts, is to every body self-evident. Sometimes the pancreas being schirrhous has so much enlarged itself as to become outwardly perceptible by the touch, as in the case we formerly related at §. 488: but sometimes, even when its bulk is considerably increased, there appears no remarkable swelling outwardly. This is confirmed in de Graaf [u], by the cases which Riolan gives us of the famous Augustin Thuanus, who, being of a melancholy habit, was for four years troubled with pains about the region of the colon, with a weight or oppression felt about the stomach, that caused him to complain whenever he stood upright or walked; yet there appeared no swelling in the hypochondria. In the deceased body of this learned historian, the liver was observed round almost like a globe, stuffed and impacted with a kind of slimy Paris-plaster, somewhat like suet. But the pancreas in bulk and weight was equal to the liver; schirrhous throughout, and filled with many lumps like pigeon-eggs. The spleen was so small, that it hardly weighed an ounce. De Graaf has in the same tract collected together many other cases of the pancreas ulcerated, schir-

[t] Brunner. Experim. Nova circa Pancreas, p. 12, 15, 16, &c. et a p. 23, ad 56. uti et apud eundum Brunnerum de Glandulis Duodeni, p. 118. [u] Regner. de Graaf de Succo Pancreat. cap. 7. p. 108, &c.

ſchirrhous, cancerous, calculous, *&c.* From whence all practiſing phyſicians may have good reaſon to ſuſpect the like diſaſters in chronical pains of the abdomen; and may thence be prudently led to adminiſter only the mildeſt remedies, and to avoid the rough or acrid that may exaſperate all the complaints.

Of the omentum.] The caul, we know from anatomy, is extended over the inteſtines, from the bottom of the ſtomach, down as low as the navel; and ſometimes it deſcends even much lower: but ſometimes it exceeds not the bounds of the epigaſtric region by its extent; for there is very great variety obſerved by anatomiſts in regard to the various dimenſions of this part. But although the omentum is for the moſt part of it extended looſely from the ſtomach before the inteſtines, yet it is alſo connected both to the veſſels which enter into the liver, and alſo to the duodenum, colon, pancreas, and ſpleen; whence various maladies may enſue, according to the various parts of the omentum injured by the diſeaſe: from whence likewiſe there will be a difficulty in forming a diagnoſis of the ſaid malady. Moreover, the moſt undoubted obſervations inform us, that a very large part of the omentum coming out through wounds of the abdomen has been cut off, and the patient has ſurvived it without any notable damage to his health. Even Galen [w] extirpared almoſt the whole omentum from a wounded gladiator; who was yet ſpeedily cured, and found no other inconvenience than that of being obliged to keep his belly warmer from the cold than before. But frequent caſes of the ſame ſort in our modern wars alſo inform us, that a very conſiderable part of the omentum has been often cut off, even without that or any other inconvenience following. From whence it is evident, that the diagnoſtic ſigns of a phlegmon, and its conſequences, in the omentum, are not eaſily to be derived from any injury of the functions of the omentum. Even Ruyſch [x] has often obſerved an entire conſumption of the whole omentum,

[w] De Uſu Partium, lib. iv. cap. 9. Charter. Tom. IV. p. 377.
[x] Obſervat. Anatom. p. 23.

both in brute animals, and in men who have die
either by an acute quinsy or by some violent death
although before death there was nothing appeared t
give room for expecting any such deficiency. And i
chronical distempers, more especially in dropsies, th
omentum is often found wasted or dissolved, which i
not very much to be wondered at.

If a phlegmon of the omentum turns into a suppu
ration or a gangrene, the most dreadful mischiefs ensu
(§. 912.) after the matter or gangrenous ichor has bee
poured out into the cavity of the abdomen.

But where the omentum is hardened into schi
rhous tumours, it may then be the cause of numerou
mischiefs, by compressing or distracting the parts t
which it is either contiguous or connected; more e
specially when the schirrhus of the omentum is of
considerable bulk, for otherwise it does but little harm
It sometimes happens in women, who have well recc
vered from their lying-in, that a hard oblong swellin
arises in the abdomen: and sometimes such swelling
or tumours will stay with them for many years, with
out any pain or uneasiness, more than the incumbranc
of their bulk. Ruysch [y] found in an opened body suc
a tumour, that was schirrhous, and formed by the c
mentum, thickened to the compass of near two inch
es, and extended in breadth for near three inches
and to a span and half in length: but the omentu
seems to be thrust up in gravid women by the distenc
ed womb; by which and the other moveable viscer
being compressed into a convoluted heap, it may the
concrete, and form such an indurated tumour; for suc
a tumour of the omentum has been found in the al
domen, even of a bony consistence [z]. And there
still a more wonderful case described by Dr Haen
who is so eminent at the Hague, as we befor
observed; for in a dropsical body he found th
omentum grown together into a compact and ver
great mass, of two inches in thickness throug
ou

[y] Observat. Anatom. obs. Chirurg. 63. p. 59. [z] Academ. Roya
des Sciences, l'annee 1732. Hist. p. 48. [a] Histor. Anatom.-medi
morbi miri incbrabilis, &c. Hagae Batavor. 1744. in 8°.

but, except towards its middle, where it was somewhat ſlenderer: and this monſtrous omentum was ſo grown into one with the ſtomach, colon, duodenum, and jejunum, as to be wholly inſeparable from them without tearing or cutting.

But the cautions for the cure or treatment of ſuch miſchiefs of the ſpleen, pancreas, and omentum, may be eaſily deducted from what we a little before propoſed for the like maladies of the ſtomach, liver, *&c.*

Of an INFLAMMATION in the BOWELS or INTESTINES.

§. 959. THE inteſtines, but more eſpecially the ſmall ones, are, like the ſtomach, very frequently invaded with an acute inflammation in their membranes, either from the common or general cauſes of a phlegmon operating upon, or particularly transferred to, theſe parts; or from ſomething acrimonious taken into the body, under the form of drink, foods, preſerves, medicines, or poiſons, which being conveyed into the inteſtines are retained and arreſted betwixt their valve-like folds; or from ſome morbific matter, acrimonious, putrid, fetid, purulent, ichorous, gangrenous, bilious, or atrabiliary, tranſlated or coming from the œſophagus, ſtomach, liver, ſpleen, pancreas, or omentum, to theſe nervous parts or membranes, and there ſettling ſo as to corrode them; or laſtly, from ſome violent cramps or convulſive conſtrictions foregoing in the bowels, and either creating an inflammation of them, or ſuppreſſing the motion by which they drive on their contents, and by that means producing an inflammation.

That the general cauſes of an inflammation before recited (§. 375, 376, 377.) may take place as well in the inteſtines as in other parts, is ſufficiently evident, ſince anatomy has plainly ſhewn us the numberleſs ſmall arteries that are diſtributed through their membranes. Moreover, in the hiſtory of Fevers (§. 593.) it was obſerved, that a fever often terminates in another diſtemper, when the humours, vitiated or changed by the fever, are ſettled upon ſome certain parts of the body, where they produce new maladies. It was there proved by many examples in practice, that acute inflammatory maladies differ very much one from another, in reſpect to the parts and emunctories towards which the matter of the fever inclines to be ſettled. Sydenham [a] obſerved, for above three years ſucceſſively, that the nature of an epidemical diſtemper of that time was generally inclined to depoſite the febrile matter towards the inteſtines, cauſing ſometimes dyſenteries, ſometimes dry-gripes, and ſometimes the moſt violent fits of the colic and iliac paſſion. But this diſtemper aroſe with a fever; which, after raging a few hours, ended in the moſt ſevere pains of the bowels. And he even affirms, that the *iliac paſſion* can only be properly ſo called when acrid or malignant humours are thrown by a tumultuous fever upon the ſtomach and inteſtines: for if the ſaid diſtemper ſhould ariſe from an hernia, indurated fæces, or the like, he thinks it ought rather to be called a *falſe* or *baſtard iliac paſſion* [b].

But that the ſmaller inteſtines are oftener inflamed than the larger, appears confirmed to us by practical obſervations; for, in the preſent malady, the intolerable pains are uſually ſeated in the umbilical region, or middle part of the abdomen, where only the ſmall inteſtines are naturally ſituated. And probably the large inteſtines are conſtitutionally leſs liable to inflammation than the ſmall, as they ſerve for collecting and retaining the groſs, putrid, and more acrimonious fæces. Moreover, every thing acrid taken into the ſtomach, or elſe rendered acrimonious therein

[a] Sect. iv. cap. 7. p. 258, &c. [b] Sect. i. cap. 4. p. 90.

in by too long ſtagnation, muſt ſpend their violence firſt upon the ſmaller, before they can reach to the larger inteſtines.

Now altho' every thing that ſtops up the inteſtinal tube, by impeding the free paſſage of the contents, may cauſe inflations and diſtenſions of the bowels, and may therefore be the remoter cauſes of inflammation in them; yet unleſs there be alſo great acrimony applied at the ſame time, they rarely produce this acute diſtemper, but rather more ſtubborn and chronical maladies, like the caſes mentioned at §. 719. where we treated upon the various matters that might be ſometimes evacuated from the body in a diarrhœa. But if humours acrimonious are alſo joined or intermixed with ſuch a vitreous or ropy phlegm, then the inteſtines may be eaſily inflamed, unleſs the ſaid congeſtion be ſpeedily expelled from the body, or the acrimony thereof corrected. Thus Galen (ſee §. 71.) experienced in himſelf the moſt ſevere pains of the abdomen, as if his body was bored through; but by a clyſter injected of the infuſed oil of rue, he diſcharged by ſtool an humour that reſembled the colour and conſiſtence of melted glaſs, after which his pains ceaſed. But ſuch a phlegmatic and inert congeſtion of humours gives no pain, unleſs there be an intermixture of ſome acrimony. Therefore a frequent cauſe of inflammation in the bowels is the acrimony of ſuch matters as are lodged in the cavity of the inteſtines. But ſuch an acrimony muſt be derived, either from what is ſwallowed into the ſtomach; or from a matter formed in other viſcera, and tranſlated thence into the bowels: both which we are to conſider.

Drinks, foods, preſerves.] What miſchiefs may follow from the drinking fermentive liquors, in which the force of fermentation is often locked up or ſuppreſſed by excluſion of the air, was before ſhewn at §. 646, *et ſeq.* where we treated upon Flatus and Belchings. For during the work of fermentation there is a wonderful ſtimulus produced, even in ſubſtances that were before the freeſt of all from acrimony, (ſee §. 605, nº 11.) From thence frequently ariſe dreadful

cramps or convulsions in the stomach and intestines; which, if not speedily relieved, end soon in a phlegmon, and a fatal gangrene or mortification in the bowels. Sometimes also liquors are drank, which are either acid in themselves, or soon become sour enough in weak bodies to injure the intestines by their acrimony; such as ale that is become vapid or flat with long keeping, or wine that is become sharp or sour, *&c.* But such foods are likewise often taken into the body, as by their natural or acquired acrimony may be no less mischievous: for thus the milk, taken by infants, is often turned sour, and clogs their bowels with a curd or cheese-like coagulum, which growing more acrimonious by arrestment corrodes and inflames their tender membranes; and from this cause, what numbers of infants perish (with an involution of the gut or iliac passion,) after the most dreadful gripes of the belly, all who are versed in practice cannot but be well acquainted. But if we examine into such things as are preserved by pickling and salting before they are taken into the stomach, we shall find they are often of so strong a nature, as to corrode even the outward skin; for among these come the hottest spices, garlic, horse-radish, *&c.* in so much that it seems wonderful the stomach is not oftener inflamed by them than upon experience we observe; and which would doubtless be oftener the case, if the alimentary passages were not so well guarded with a thick and soft mucus throughout their whole surface; while the thirst excited by such acrid ingesta gives an admonition to qualify and dilute them by watery drinks, by which their excess of acrimony may be duly weakened. Consult here what has been said at §. 586, nº 1.

Medicines or poisons.] Although these commonly affect the stomach first, and for that reason were before considered (§. 951.) as the cause of a stomach-phlegmon, yet from a copious intermixture with the alimentary contents of that receptacle, they sometimes but little affect it: but having once reached the larger surface of the intestine, (to which, if they long adhere, or are applied by repeated arrestments from the intesti-

nal

nal valves and folds), they excite a phlegmon or inflammation in the points of contact. For thus we all know the reſin of jalap-root extracted, when it ſoftens with heat, ſticks very firmly to every thing it touches; and at the ſame time contains in itſelf ſo ſtrong an acrimony as is often obſerved in practice to excite the moſt troubleſome pains of the abdomen, with over-purgings of dangerous conſequence; unleſs thoſe effects are guarded againſt by a long-continued levigation of it with ſugar, or by reducing its coheſive tenacity by grinding with the yelk of an egg. The like miſchiefs to the bowels have been alſo known from the uſe of coloquintida and other acrid purgatives. But much more will the worſt of theſe miſchiefs follow from arſenic, or other acrid poiſons; upon which you may peruſe the often commended treatiſe of Wepfer, *De cicuta aquatica*.

Alſo from morbific matter, acrimonious, putrid, *&c.*] When we treated upon a Febrile Diarrhœa (at §. 719.) it appeared, that the matter of the diſeaſe might be transferred from various parts of the body to the inteſtines, ſo as to be from them evacuated in ſtools; and in the ſame place we alſo remarked the great diverſity of matter this way expelled. Even the cholera morbus (ſometimes called the yellow-fever) ſhews us how ſuddenly all the humours of the body may be transfuſed with great violence through the inteſtines, ſo as to exhauſt all the powers of the ſtrongeſt perſons in a few hours, and cauſe convulſions by mere inanition of the veſſels, the blood being fuſed or diſſolved with a force ſeemingly poiſonous, and expelled through the meſeraical veſſels into the ſtomach and inteſtines: for when theſe patients are upon the point of recovery, after ſo little a time, they appear weak, pallid, and wholly exhauſted. If therefore a quantity of a corrupt liquid, either purulent, ichorous, or the like, be lodged in ſome part of the body, and is from thence tranſlated to the inteſtines, it may eaſily corrode and inflame them by its acrimony. And for this reaſon inflammations, ulcerations, and putrefactions of the bowels are reckoned up among the

effects

effects of atra-bilis flowing to them (§. 1104.); and that the same effects follow from the worst kind of the scurvy is remarked at §. 1151, nº 4. as we shall hereafter more plainly shew.

Violent cramp or convulsion foregoing, *&c.*] We know well from physiology, that the intestines have a surprising worm-like motion, called *peristaltic* or *contractive*, by which their contents are urged forwards, and pressed against their membranous sides, by which all the more fluid and milky parts are successively taken in by the mouths of the lacteal and meseraical veins, till at length the gross and juiceless fæces are alone sent forward to be excluded the body by the rectum. It also appears, that this vermicular motion is made by muscular threads spread around the intestine, which continue to operate even a long time after a patient is dead, and may then be again excited into action, when the motion has spontaneously ceased, by irritating the bowel with heat, puncture, or other stimulus, upon which see the comment to §. 648. where divers experiments were related, to shew, that several substances applied to the intestines excited cramps in these muscular fibres, by which the gut becomes violently constringed, not only in the place of contact with the acrid substance, but also in divers others parts at the same time, so as to arrest or refuse any passage to their advancing contents. This has likewise been fairly confirmed by experiments made upon a living frog by Peyerus[d].

Therefore acrimonious substances taken into the stomach, or transferred to the intestines from more distant parts of the body, may excite such a convulsion of the gut, and by that means produce an inflammation of the bowels.

But sometimes the like cramps are occasioned in the bowels by very different causes, not reducible to any kind of acrimony that we know of. For thus the latent matter, which, being deposited upon the extremities, occasions the gout with most exquisite fits of pain; if the said deposition of it on the usual parts

[d] Pareng. Anatom. exercit. 1. cap. 9. p. 47.

parts be impeded through weakneſs of body or an imprudent management, it will frequently excite the moſt dreadful cramps in the viſcera of the belly, (upon which ſee §. 1273.); and from the ſame cauſe the bowels are often ſo cramped or conſtringed, that in the contracted parts all vital influx and reflux of the blood and ſpirits are intercepted, of which a fatal gangrene is ſuddenly the conſequence. It is true indeed, that ſome kind of acrimony may here be culpable in the matter of the gout, ſince by repeated fits it will even convert the ligaments, tendons, and membranes, into a chalky ſubſtance. But in weak or nervous, hyſterical and hypochondriacal habits, the like convulſive cramps of the viſcera will ariſe merely from a diſturbed motion of the ſpirits; in the ſame manner as they are commonly known to ariſe in other parts of the body. Sydenham [e], who has wiſely cautioned againſt the variable face under which this complaint hides itſelf ſo as often to deceive the leſs ſkilful practitioners, has alſo obſerved, that it will ſometimes produce ſymptoms nearly reſembling the iliac paſſion. It is true indeed, that he has confuſed the periodical jaundice ariſing from ſtones of the gall-bladder with theſe convulſive pains, which ſpring from a mere nervous or ſimple ſpaſm without any ſuch obdurate cauſe; but then he expreſsly intimates, that thoſe ſevere pains, which follow from hyſterical and hypochondriacal complaints, have no conſequent jaundice attending them, but are eaſily carried off by nervous and antihyſterical medicines. There are many tender perſons, who by long ſtanding upon a cold ſtone pavement have immediately been troubled with ſevere gripes of the belly, as we remarked before upon another occaſion at §. 650, n° 3. where there are alſo more particulars given, ſhewing, that ſuch convulſions of the bowels may be often excited, and again removed, or cured, by the application of cauſes and remedies to other diſtant parts of the body.

§. 960.

[e] In Diſſertatione Epiſtolari ad Gulielmum Cole, p. 488. et ſect. iv. cap. 7. p. 267.

§. 960. AN inflammation once formed in the bowels, produces a conſtriction of the inteſtine, ſhuts up its cavity, and intercepts the paſſage of the advancing contents propelled from above: thereupon the parts of the inteſtinal tube that are above the ſeat of the obſtruction, and even the ſtomach itſelf, become greatly inflated, extended, over-ſtrained, or dilacerated, and inflamed; and by this means is created a moſt acute, ardent, and fixed pain, with a ſwelling round all the inflamed parts: but here, if the malady be irritated by forcing remedies, it occaſions violent convulſions of the diaphragm and abdominal muſcles, wholly intercepts the ſtools, and excites a rejection by vomit of every thing taken, whether alimentary or forcing, ſooner or later, according as the obſtruction is ſeated higher up or lower down in the gut; from whence ſpring painful flatulencies or belchings, moſt ſevere gripes, with a murmuring noiſe of the bowels, an iliac paſſion or rejection of the inteſtinal contents, a volvulus or involution of one part of the gut within the other; whence an abſceſs, gangrene, ſcirrhus, or cancer; a moſt ſharp fever, and extreme weakneſs, from the violent pains; which next cloſe by a ſpeedy death.

The human inteſtines are very differently diſpoſed in the living body, from what they often appear to us in the dead ſubject; for in the laſt caſe they oftener appear diſtended with flatus, ſo as to exhibit a very ample cavity to the eye. But wounds of the abdomen, and diſſections of living animals, have taught us, that the inteſtines, more eſpecially the ſmall ones, are in their healthy ſtate conſiderably thick, or fleſhy, and ſolid, in their ſubſtance; including but a ſmall cavity, which is ſtill further diminiſhed by their projecting valves

valves of plaits, and the internal or villous lining compoſed by the evaneſcent ends of the veſſels, by both which a too quick paſſage of the nouriſhment is checked and retarded. We ſee that ſome perſons will drink ſeveral quarts of Spaw-waters in the ſpace of an hour or two, and yet not a drop of them runs off by ſtools; which plainly enough proves the bore or light of the inteſtines to be naturally of but a ſmall diameter: and therefore, if an inflammatory ſwelling ariſes in any part of the gut, it will not be wonderful if it entirely ſhuts up the light of it, ſo as to quite intercept the paſſage of its contents; and the more ſo, as the acute pain, which is inſeparable from an inflammation of the bowels, obliges the painful part of the gut to contract with a convulſive cramp or ſtricture, as we declared more at large under the aphoriſm preceding. Ruyſch [f] found the cauſe of this malady, in ſeveral opened bodies, to be ſuch a cloſe ſtricture of the gut as allowed nothing to paſs thro' it. Nor will this ſeem ſo wonderful, if we conſider, that the ample cavities of the noſtrils are ſometimes ſo cloſed or filled by a ſlight inflammation and ſwelling of the mucous membrane in a cold, that the patient can draw no air through them to ſupply the breathing.

Such an obſtacle, therefore, being formed, as wholly ſtops up the light or bore of the gut, will occaſion all that is ſwallowed into the body to be collected above the part diſeaſed; and the air itſelf being unable to gain an exit, will rarefy and diſtend the part of the inteſtines that lies betwixt the ſtomach and the part inflamed; and will even inflate the ſtomach itſelf, until it gains a diſcharge in belchings: but the cauſe of the malady ſtill continuing, there will be continual returns of the ſaid flatulent complaints, as we before explained more at large when we treated profeſſedly upon Flatus and Belchings. Sometimes this ſtricture or ſtoppage is ſeated in ſeveral parts of the inteſtine at the ſame time, as appears from the opening of bodies deceaſed of this malady; and in that caſe the ſwallowed

[f] Obſervat. Anat. Chirurg. obſ. 91. p. 85. [g] Ibid. obſ. 92. p. 86.

ed air intercepted betwixt the two conſtringed parts, or the air that is generated by fermentation and putrefaction of the inteſtinal contents, being further rarefied by the heat of the body, may cauſe a dreadful diſtenſion or tumefaction of the inteſtinal tube, with the moſt excruciating pains; and from this diſtraction a new and more ample inflammation and pain will ariſe, and, inſtead of confining itſelf to one or two places, will be ſpread largely throughout the abdomen. Ruyſch [g] obſerved in the body of a girl killed by theſe pains, that the lower part of the colon, which begins to take the name of rectum, was diſtended into ſuch an enormous bulk as concealed all the other viſcera of the abdomen. It may eaſily be conceived what enormous pains muſt ariſe from ſo great a diſtraction in membranous parts, that have ſo ſharp a ſenſe. More of the like examples of enormous ſwellings in the inteſtines may be ſeen in Bonetus [h].

But when the ingeſted aliments or medicines are by the periſtaltic motion forced with ſome ſtreſs upon the inflamed parts, the pain is then very greatly increaſed. And therefore, although the pain remains fixed in this malady, yet it is more violently increaſed at intervals, as Sydenham [i] has well remarked, when he tells us, "That the pain ſometimes is abated, and "ſoon after a fit of it returns again; the approach "of which being foreſeen by the patient, obliges "him to ſhew, by his miſerable countenance and "complaints, the ſame abhorrence and averſion as if "the fit was preſent." This is a circumſtance that I have often likewiſe obſerved in theſe patients myſelf; and ſeems to ariſe from the aliments, drinks, or flatus, propelled as far as the inflamed parts: for when we examine this periſtaltic or *vermicular* motion in living animals diſſected, (ſo called as being like that of worms, which go forward by a ſucceſſive approximation and removal of the ringlets that compoſe their bodies) we obſerve that the orbicular fibres of the inteſtines contract ſucceſſively in order one after the other, ſo as to drive forward the contents along the tube

[h] Lib. iii. ſect. xiv. Tom. II. p. 214. [i] Sect. iv. cap. 7. 259.

tube of the inteſtine; but in ſuch a manner, that, after the contents have gone through ſome part of the gut, they are in ſome meaſure repelled back again, by the like vermicular motion reverted or turned retrograde, for ſome length of the gut, only the progreſſive motion always exceeds that which is retrograde; and this worm-like creeping or working of the fibres is continued through the whole tract of the inteſtines, in ſuch alterations, that all the fluid parts may be drunk up from the inteſtinal contents by the villous extremities of the abſorbing veſſels. Therefore, when the inteſtinal contents are thus driven on to the inflamed part, the pain will be augmented; but while they are carried back again, the pain will be leſſened. Moreover, we ſee, that in living animals the motion of the guts, which we call vermicular, will ſometimes be ſtill for ſeveral minutes, and will then again be renewed; from all which one may be able to underſtand the preſent appearance in this malady.

But that convulſions of the diaphragm and abdominal muſcles may ariſe from ſuch an irritation, and that ſickneſs with vomitings may ſpring from thence, appears evidently from what we before delivered concerning the ſame ſubject at §. 642, 656: and it was declared at §. 656, that from a ſtubborn vomiting an iliac paſſion might ariſe. But what is taken into the body, is again rejected ſooner or later, according as the inflammation is ſeated nearer to or farther from the ſtomach; upon which particular we alſo treated at §. 656.

Painful flatulencies, and murmurings of the bowels, with moſt ſevere gripes.] Under the foregoing aphoriſm it was obſerved, that certain experiments demonſtrate, that an irritation being made in one part of the inteſtine, occaſions not only a conſtriction in that place, but alſo in many other adjacent parts of the gut. Now from hence the painful flatulencies are intercepted; and, the cramps being afterwards removed, the confined air gets liberty to wander more freely through the inteſtines with borborygmi or murmurings, until it is again intercepted or locked up, upon

which the cramps and pains return. But since an inflammation formed in one part of the intestine usually spreads itself larger as this malady continues longer, it may thence readily appear what violent pains must arise while the inflamed parts are overstrained by the flatus. Aretæus[k] has remarked these symptoms in the present malady, namely, wandering pains, with empty belchings that give no relief, and a murmuring of the bowels with wind, that will descend even to the anus, and yet not discharge itself. From hence appears the reason why Sydenham[l] observes, that, in the beginning of the distemper, the pain does not so certainly determine itself to any one point of the belly, while the cramp holds several distinct parts of the intestine with such a constriction; but when the whole violence of the malady urges upon one part, the pain is then fixed as it were in a point, and often becomes most excruciating, without abatement, till a gangrene being at length formed suddenly removes all sense of pain. At the same time also the reason is evident why there is a constipation of the bowels, or a total suppression of the stools, denying a passage to every thing.

Iliac passion, or volvulus, *&c.*] When an inflammation of the intestine wholly intercepts its light or passage, the malady is then called *Ileus Morbus;* for thus Galen has defined it: *The ileus is a phlegmon of the intestines, to such a degree that neither flatus nor fæces can pass out through them; in consequence of which follow most violent gripings, and pains intolerably excruciating*[m]. Whence, in another place, he says[n], it is a property essential to this malady to allow no discharge downward; but as for the vomiting, it attends not always, but only in the more urgent cases. The like is also pronounced by Hippocrates concerning this distemper: *For the intestine is here dried by an inflammation; and at the same time so constringed or bound up, that neither wind*

k De Causis et Signis Morbor. Acut. lib. ii. cap. 6. p. 18.

l Sect. v. cap. 7. p. 259.

m Ileus est phlegmon intestinorum, ita ut nec flatus nec stercora exeant; tormina sequuntur vehementia, et cruciatus intolerabiles. *Defin. Med.* nº 273. *Charter. Tom. II. p.* 264.

n Comment. in Aphor. 10. sect. vii. Charter. Tom. IX. p. 296.

wind nor aliments can paſs through; but the belly becomes hard or tight, and the patient has ſometimes a vomiting [o]. Therefore the term *ileus* is beſt derived (απο τυ ελειν) from the word to *conſtringe*, *ſtraiten*, or *bind up* togegether in a ſmall compaſs; but when the ſame word is written with an aſpiration ειλειν, it then rather ſignifies a *contortion*, a twiſting or winding into a knot, or a thruſting of one part into another. And thus the preſent malady is, from the revolutions of the flatus through the windings of the upper inteſtine, by Aretæus [p] called ειλεον; and from thence the commonly received term of *volvulus* ſeems to have been alſo derived. Celſus [q] however calls it barely the diſeaſe of the ſmall inteſtine, under the Greek term ειλεον, written without an aſpiration, and without explaining it by any Latin name: but treating, in the next chapter, of the diſeaſe in the larger inteſtine, he ſays [r] the gut ſeems to be *turned* or *twiſted*, which comes nearer the term that is written with an aſpiration. Poſſibly it has been therefore alſo called *volvulus*, becauſe (Cœlius Aurelianus [s] ſays) theſe patients "perceive their "inteſtines to be twiſted (*convolvi*) or convoluted;" or becauſe, from the violence of their pains, theſe patients bend and wind their bodies over the affected parts of the belly. For thus we ſee, that theſe miſerable patients endeavour to relieve their pains by bending the body forwards, and turning it round from one ſide to the other. Afterwards the name *volvus* ſeems to have been eſtabliſhed and retained, from the popular belief that the gut became ſo twiſted or complicated by the cramp, as to deny all paſſage, by ſtraitening or ſhutting up the bore or light; or rather when the cramped part of the gut entered into the more ample dilated portion, which many have better diſtinguiſhed by the title of an *introſuſception* of the gut. For it is hardly conceivable how the inteſtine connec-

[o] Reſiccatur enim ſimul inteſtinum, et conſtipatur ex inflammatione, ita ut neque flatus neque alimenta pertranſeant, ſed venter durus ſit, et vomat interdum. *De Morbis*, *lib.* iii. *cap.* 13. *Charter. Tom. VII. p.* 588.

[p] De Cauſis et Signis Morb. Acut. lib. ii. cap. 6. p. 18.

[q] Lib. iv. cap. 13. p. 221. [r] Ibid. p. 223. [s] Acutor. Morb. lib. iii. cap. 17. p. 235.

ted to the meſentery can be ſo twiſted or contorted as wholly to ſhut up its cavity. This indeed may happen, if the connection to the meſentery be firſt diſſolved by a putrefaction, as Ruyſch [t] aſſures us he has twice obſerved; but in ſuch a caſe, the patient muſt be upon the point of death from a gangrene of the meſentery before ſuch a twiſting can happen, ſince injuries of that part are ſo extremely dangerous, as we have ſhewn before at §. 170, nº 3. But ſuch introſuſceptions of the gut are often found in deceaſed bodies, where the cramped or conſtringed portion of the inteſtine being narrow has for a conſiderable length entered into the contiguous more relaxed portion, ſo as to intercept the free paſſage through the tube of the inteſtines. This is what Ruyſch [u] has twice demonſtrated in public. In the body of a girl, who died of convulſions, Willis [w] obſerved the ſmall inteſtines thus involuted one within the other in ſeveral places, "ſo that the convex ſurface of one part "entered the concavity of the other, as if it had been "for a long way lodged or thruſt into a ſheath." It is therefore without reaſon that Helmont [x] pronounces an involution of the gut impoſſible, becauſe in a very rich citizen of Antwerp (who had diſpatched couriers to all parts with a promiſe of eighty thouſand pounds reward for his cure in this malady, but expired within the week) he had found after death, that, inſtead of any involution, it was a collection of indurated fæces in the ilium or ſmall gut, about 16 inches from its opening into the cæcum. It is true, nobody can deny but this malady may ariſe from a ſtoppage of the inteſtines with impervious matters; but it would be raſh to conclude thence, that it is the entire and only cauſe. Indeed, conſidering the wonderful connection of the guts with the meſentery, together with their ſmoothneſs and lubricity, it would ſeem to be a difficulty for ſuch a mutual introſuſception of the gut to take place: for we ſee in dead bodies, that it is no eaſy matter,

[t] Obſervat. Anat. Chirurg. obſ. 91. p. 84.
[u] Ibid. p. 85.
[w] Patholog. Cerebri, cap. 8. p. 107. et ſeq. p. 339.
[x] De Flatibus, ſect. 39.

matter to cauſe one part of the gut to enter thus within the other, and if it be once ſo effected it ſoon comes out again of its own accord. In the bowels of living animals it has been in vain attempted to imitate the malady we call an introſuſception of the gut [y]. And yet ocular demonſtration has convinced us, that this oftener happens than one would commonly believe, as Dr Velſe has fairly proved by many valuable obſervations in his Theſis upon the ſubject; but it more frequently happens in thoſe of tender years, as that learned author obſerves, and as I have myſelf ſeveral times ſeen. He makes a diſtinction of the volvulus into *perfect* and *imperfect*. By the *perfect* he underſtands a portion of the inteſtine, with its annexed meſentery, urged by diſeaſe into the next more dilated portion of the ſame gut: but the *imperfect* is ſaid to be when the looſe part of the gut oppoſite to the meſentery enters thus, while its annexed ſide ſtill remains in the ſame direction with its conjoined meſentery. That the contracted part of the inteſtine may thus enter the more dilated portion to a conſiderable extent, is ſhewn by Peyerus [z], who found the part introſuſcepted equal to four fingers breadth. Nor is it always obſerved, that the upper part of the gut enters thus into the lower, ſince the reverſe has been remarked; but then the meſentery always enters with the gut in a perfect volvulus, and ſo ſtraitens or corks up the tube, that an evolution or return of the gut becomes very difficult. But Peyerus [a] very plainly ſaw, that a volvulus would thus form itſelf in the guts of a frog, irritated to their motion, by which ſome of the more ample parts would receive into them others next continuous, and confine them ſome time by introſuſception, until the longitudinal fibres ſtretched them out, or withdrew the arreſted parts from their ſtrict lodgements. This is a fair experiment for explaining both the production and cauſe of gripings and of the volvulus: for it ſeems highly credible, that this cramp-

[y] Videatur de his Cornel. Henr. Velſe Diſſert. Inaugural. de Mutuo Inteſtinor. Ingreſſu, &c. Lugd. Batav. 1742. p. 2, 3, &c.

[z] Parerg. Anatom. Exercit. i. cap. 9, p. 46. [a] Ibidem, p. 47.

like contraction of the gut, and intruſion of it together with the annexed meſentery into the adjacent more ample portion, could not happen but with conſiderable pains; which pains muſt go off again, when the gut recovered its former rectitude of place, until a like cramp and inverſion of it returned. And this acquaints us with the reaſon of another circumſtance, namely, why in the beginning of this malady the ſevere pains often inflict but by ſhort intervals: but when the introſuſcepted portion is of ſuch an extent, or is ſo ſtrongly arreſted by the inflammation and ſwelling of it, that an evolution can be no longer practicable by the long fibres, the pain then remains fixed, ardent, and confined always to one and the ſame place. This is what Sydenham [b] has very well obſerved in treating upon the preſent malady; for his words are, "For in the beginning of this malady the pain is not "ſo certainly confined to one particular point, nor "in its progreſs do the bowels ſo obſtinately reſiſt the "power of cathartics; but the more the pain is in-"creaſed, the more obſtinately does it fix in one "point, the vomiting enſues ſo much oftener, and "the bowels are ſo much more conſtipated or bound "up." But he obſerves, that as the violence of this malady advances, the periſtaltic motion of the inteſtines becomes at length wholly inverted, and all the purgatives given to procure a paſſage are immediately rejected again as if they were vomits; and that even clyſters and ſuppoſitories, conveyed into the bowels by the anus, were often, by the ſaid retrogade motion, carried up through the whole tract of the alimentary tube, and rejected by vomit *. Such excrementitious or fæcal vomitings were alſo obſerved in this malady by the ancients [c], who have condemned them as a fatal ſign. Some of celebrated character have indeed denied that there can be any ſuch retrograde or reverted motion of the bowels, believing the convulſive

[b] Sect. iv. cap. 7. p. 259. * Diemerbroek Anatom. lib. i. cap. 8. p. 36. [c] Hippoc. de Victus Ratione Sanorum, lib. iii. cap. 7. Charter. Tom. VI. p. 487. Galen de Locis Affectis, lib. vi. cap. 2. Charter. Tom. VII. p. 509. Æginet. lib. iii. cap. 44. p. 45. verſa.

ſive action or preſſure of the diaphragm and abdominal muſcles exerted in vomition to be ſufficient for urging the contents of the bowels up into the ſtomach, as they are in this caſe ſo much filled all the way betwixt the ſtomach and the obſtacle: and for the putrid or excrementitious ſmell of what is rejected, they have ſuppoſed it to ariſe from the long ſtay of thoſe contents in the ſtomach and ſmall inteſtines. But the *dung* or *excrement*, properly ſo called, is naturally to be found only in the large inteſtines, and never in the ſmall inteſtines but by diſeaſe or violence, and even then exceeding rarely. I have viſited chronical maladies of this kind, in which, the paſſage being ſtopped up by a ſchirrhus, the patients have hardly ever once gone to ſtool; but after four, five, or even eight days, the greateſt anguiſh has invaded and brought on a vomiting, that rejected every thing which was ſwallowed into the body during that whole time; and yet there has not been any dung-like or excrementitious ſmell in any part that was brought up. After ſuch a removal of the oppreſſing load, theſe patients have found themſelves tolerably well, have had a craving appetite for nouriſhments, and have found themſelves recruited by what refections were given them, until, after a like interval of time, their vomiting has returned as at firſt: and thus I have known the diſtemper ſupported for ſeveral years. Nor is there any objection to this, deducible from the experiments that have been made on living animals by tying up the ſmall inteſtines with a ligature [d]; ſince, in ſuch an unparallel caſe, there could be no opportunity for any thing to be rejected which was intercepted betwixt the ligature and anus, within the tube of the inteſtine: nor can ſuch experiments ſuffice to explain how clyſters injected ſhould be returned by the mouth with a vomiting, which we have known to be truly a matter of fact in the iliac paſſion; for this is what has been plainly ſeen by myſelf, and is alſo confirmed by the obſervations of writers of the greateſt probity. It will perhaps ſeem difficult to underſtand how the contents of the

[d] Acad. des Sciences, l'annee 1713 Mem. p. 470.

the large inteſtines can be able to paſs into the ſmall one of the ileum; and likewiſe to conceive how they ſhould get over the obſtacle or ſeat of the volvulus: but if it be conſidered, that, by this retrograde periſtaltic motion, the ileum itſelf is emptied, while the cæcum is greatly urged and laterally diſtended, ſuch a paſſage may ſeem poſſible; and if the volvulus be formed by an introſuſception of a lower portion of the gut into the upper, the way will not be ſo wholly intercepted for any thing to paſs upwards by the reverted motion. But if the gut be in this manner involuted downwards, ſo that the lower portion being more dilated takes in the upper, ſuch a return will then be much more difficult: but then we are alſo to remark, this vomiting of the fetid dung ſeldom happens till the patient is got into the laſt extremity of the complaint, namely, when a gangrene is already preſent, or upon the brink of approaching; but it is well known, that, however tight or ſtrained the parts may be under a ſtate of painful inflammation, they notwithſtanding relax and ſubſide when the phlegmon changes to a gangrene. Hence it is that Hippocrates and Galen have, in places before-cited from them, pronounced that a patient ſeldom or never recovers in the iliac paſſion, when it is attended with a vomiting of their dung.

An abſceſs, gangrene, *&c.*] That all the effects of inflammation may here follow, is ſelf-apparent; but the moſt acute fever which attends upon a phlegmon of the bowels, if it be not immediately relieved by art, ſoon produces a fatal gangrene, as all the vital influx and reflux of the circulating humours is ſuddenly deſtroyed by the cramp-like conſtriction and intenſe inflammation. But again, as Aretæus [e] obſerves, the moſt ſevere pain (which in this malady makes death ſeem very comfortable to the patient) does greatly increaſe the fever, and haſten the gangrene, ſee §. 226. From hence it is that in another place he plainly intimates, that many die ſuddenly by mere exceſs of violence in the pain [f]; while in others the inteſtine either

[e] De Curatione Morborum Acutor. lib. ii. cap. v. p. 105. [f] De Cauſis et Signis Morbor. Acutor. lib. ii. cap. 6. p. 18.

ther ſuppurates, or turns black with a gangrene, and breaking off by the putrefaction kills the patient. So that he ſeems to have recounted only the ſymptoms of the middle or more moderate kind of volvulus; believing, that, in the moſt violent kind of the malady, nothing more than exceſſive pains could be obſerved by the phyſician betwixt the invaſion and the ſpeedily approaching death of the patient. The powers even of the ſtrongeſt perſons are immediately ſunk in the preſent malady; whence it is that Aretæus reckons ſuch an (ἔκλυσιν) *eclipſe*, or extinction of the bodily powers, among the ſymptoms of a moderate volvulus. But it was before ſaid, at §. 661, where we treated of Febrile Weakneſs, that offenſive humours, or poiſonous matters, lodged in the firſt paſſages, occaſion a very ſudden weakneſs of all the powers; and we ſee, that, in perſons a little before perfectly in health, an inflammation of the inteſtine from an incarcerated rupture will ſpeedily cauſe a ſinking of all the powers. Whence it ſeems, that theſe very nervous parts of the body being injured, have the property of immediately changing thoſe parts of the body which afford the conſtant ſprings of all the animal and vital powers in their natural degree of ſtrength or integrity. It would perhaps be difficult to explain this, *a priori*, from the corporeal cauſes; but it may ſuffice the purpoſes of a phyſician, if he knows the ſimple truths that are neceſſary, as they ſtand remarked by faithful obſervations.

From hence we underſtand why ſometimes, altho' rarely, a volvulus is to be obſerved in infants that die ſuddenly convulſed, without any ſigns of a formed inflammation or gangrene[g]; for in theſe death follows immediately from the convulſions, excited by the extreme pain and irritation of the inteſtine from its acrid contents, before thoſe effects can take place. But in adult bodies deceaſed of this malady, as far as I have been able to learn, there was always found an inflammation, or at leaſt ſuch effects as follow immediately from inflammation as the cauſe.

§. 961.

g Vide Cornel. Henric. Velſe Diſſertat. ante citatam.

§. 961. AS long as this malady continues in its inflammatory ſtage, it often impoſes upon thoſe who are incautious under the name of a colicky pain, by whom it is, with the moſt dangerous events, aſcribed to cold, to wind, or to flatulencies, and accordingly ill-treated by carminative and hot medicines, with the moſt fatal conſequences.

As the moſt troubleſome pains of the abdomen often ariſe without any previous inflammation, more eſpecially in thoſe who have very weak or irritable nerves; and in ſuch often from the ſlighteſt cauſes as a cold in the feet, *&c.*; and as ſuch pains are often very quickly removed or quieted by an expulſion of the flatulencies; thereupon immediately almoſt every perſon is for applying to the uſe of ſuch warm medicines as are termed *carminatives* or expellers of wind, all of which poſſeſs a very conſiderable acrimony or heating force. We ſee likewiſe, that the ancient phyſicians adminiſtered the ſame ſort of warm medicines, which they termed (κολικα) *colical*, for the diſcuſſion of flatulencies. For Celſus [h] recommends to us ſuch a remedy as the invention of Caſſius, and which contains the ſharpeſt ſpices, ſuch as long and round pepper, coſtus, *&c.* But this he very judiciouſly adviſes for an over-charging of the bowels, from whence the pain, he ſays, *in pleriſque poſt frigora cruditateſque oritur, deinde quieſcit; et per ætatem ſæpe repetens ſic cruciat, ut vitæ ſpatio nihil demat*; "in "moſt caſes ariſes after colds and crudities, and then "lies quiet at intervals; ſo that by frequent returns "it long torments the patient, but without any cur-"tailment or ſhortening of his life." From which account it plainly appears, that this was no inflammatory malady. And in the ſame manner Aretæus [i], for an *ileus* that ariſes, *abſque inflammatione, ob corruptionem, aut validum frigus*, "without inflamma-"tion,

[h] Lib. iv. cap. 14. p. 223, 224. lib. ii. cap. 5. p. 105.

[i] De Curat. Morbor. Acutor.

" tion, from a corruption of the aliments, or from " violent cold," adviſes to omit blood-letting, and to uſe cummin and rue for an expulſion of the flatus; but at the ſame time orders emollient and oily medicines both externally and internally. Moreover, the ancient phyſicians, when they uſed the like ſpicy remedies, infuſed in them a large proportion of water, which renders them very eaſily ſupportable, and leſs miſchievous; but at preſent the ſhops luxuriantly abound with ſimple and compound aromatic ſpirits, prepared from an inflammable or vinous ſpirit, and highly praiſed or reputed by the vulgar for the expulſion of flatulencies; whence it is a rarity for a phyſician to be called in theſe painful complaints before they have been well doſed with the like liquors: but it muſt be very apparent to every one, how much the malady muſt become increaſed, when a phlegmon ſeated in the bowels is irritated by ſuch ardent and ſpirituous liquors. I have thus ſeen an iliac pain or paſſion fatal in eight hours time, after drinking ſix ounces of ſpirituous water diſtilled from lovage-ſeeds. And many there are who periſh from the ſame cauſe, who might probably have been otherwiſe recovered. Even where the pain of the belly ariſes only from a cramp of the gut, without any inflammation, it is very unadviſeable to make uſe of the like heating ſpirits; ſince they are always in danger of doing great miſchiefs, if they prove not directly ſufficient to remove the pain. For though the malady ariſes here not from any original inflammation, yet the convulſive cramp of the inteſtine, that gives birth to the flatulent diſtenſion, may thus eaſily excite a conſequent phlegmon, as we made to appear before at §. 959. At leaſt it will be much ſafer here to uſe only thoſe remedies that have a more gentle ſpicyneſs; ſuch as the four greater and leſſer warm ſeeds of the ſhops, infuſed in a due proportion of water; for then they are hardly ever able to do any miſchief: but if from the ſymptoms or ſigns we perceive an inflammation to be preſent, the uſe even of theſe muſt be rejected.

§. 962.

§. 962. BUT this painful malady is very eafil known, as a true inflammation from the acute continual fever that attends it from the fevere thirſt, great heat, hard pulſe, an burning pain; together with a flame-coloure urine, and ſudden weakneſs of the powers.

A due attendance muſt therefore be given to th ſigns which point out a true inflammation in the pre ſent malady; and theſe are ſo very apparent, that n expert phyſician can poſſibly be miſtaken. When th iliac pain or paſſion ſprings from an original inflam mation of the bowels, it is uſually preceded by a fever which, raging but for a few hours, at length termi nates in the preſent malady, as Sydenham [k] hath ver well remarked: and the like is alſo obſerved in reſpec to a pleuriſy, quinſy, and other inflammatory diſtem pers; namely, a fever goes ſome time before, and ther follows a phlegmon in this or that part of the body But when a cramp or convulſion of the gut produces an inflammation without a fever having preceded, i that caſe the fever comes after the phlegmon. At the ſame time likewiſe attend all the ſymptoms that uſu ally accompany an acute fever and an inflammation, namely, heat, thirſt, *&c.* But concerning the extreme weakneſs in this malady, we have already treated at §. 960. But all theſe are the ſymptoms which attend the malady beginning or advancing, but which ſud denly change almoſt to the contrary when the diſtem per turns to be fatal: for then the great heat is ſuc ceeded by a coldneſs; the pain ceaſes; and the pulſe, that was before hard and ſtrong, is now weak and in termitting, but extremely quick, as Aretæus [l] hath very well remarked. Sometimes, too, there is ſuch a violent conſtriction of the anus, that even clyſters cannot be injected; which is alſo a ſymptom remark ed both by Aretæus [m] and Hippocrates [n]. From hence, too, we may be able to underſtand another paſſage in the

[k] Sect. iv. cap. 7. p. 259. [l] De Cauſis et Signis Morb. Acutor. lib. ii. cap. 6. p. 18. [m] Ibid. [n] De Affectionibus, cap. 6. Charter. Tom. VII. p 626.

the laſt great author, whoſe words are, *But if, the volvulus or iliac paſſion being remitted, a fever ſhall invade the patient, his malady is fatal; and poſſibly it may be ſo likewiſe, although a purging or relaxation of the lower bowels may enſue*[n]. For if the volvulus ſhall have continued from a violent cramp for a conſiderable time, it occaſions an inflammation that is ſoon joined with a fever, and that very ſhortly is followed with a gangrene: thereupon the pain ſuddenly remits, or elſe goes entirely off; and the gangrenous part of the gut no longer makes any reſiſtance to the urging contents, which therefore run off in a flux or purging; while the patient expires, not of the purging, but of the mortification in the bowels, as we ſhall ſhew hereafter at §. 969.

§. 963. IF the ſame painful malady (§. 959.) ſhall take up its ſeat within the inflected colon, it forms the diſtemper called a Colic; but if it invades the extreme parts of the inteſtinum rectum, it is not unuſual to miſtake it for the Blind Piles: yet a dyſentery that is moderate, ſomewhat bloody, or bilious, carries it off.

Although practical obſervations inform us, that a phlegmon, and volvulus or iliac paſſion, do the moſt frequently take place within the ſmall inteſtines, yet we are aſſured that the ſame malady may be alſo lodged throughout the whole tract of the large inteſtines; into the belief of which we are perſuaded by the ſimitude of their fabric, and in the truth of which we are equally confirmed by convincing obſervations. Ruyſch[p] found a volvulus in the large inteſtine which we call the *colon*; and in the body of a child who died of a moſt ſevere iliac paſſion, Hildanus[q] found the gut cæcum was contracted, and had inſinuated itſelf into

[n] At ſi, remiſſo volvulo, febris illum prehenderit, deſperatus eſt, fortaſſis enim etiam ſoluta alvus inferior interficiet. *Hippocrat. de Morb. lib.* iii. *cap.* 13. *Charter. Tom. VII. p.* 588.

[p] Adverſar. Decad. 3. p. 17.

[q] Obſervat. Chirurg. cent. i. no 61. p. 49.

the ileum, whereby this laſt gut was ſo ſtopped, that nothing could paſs out from the ſmall inteſtines into the colon. He laid open the ileum to come at and take out the cæcum, which appeared inflamed and ſwelled on all ſides; and in the bottom of the cæcum appeared an ulcerated ſchirrhus. He even affirms he had inſpected many bodies deceaſed of this malady, and always found the origin and cauſe of the diſtemper to be ſeated about the gut cæcum: and therefore he was induced to believe, that the Bauhine valve became ſo contracted from the inflammation of the cæcum, as to allow nothing to paſs from the ileum into the colon; from whence the malady ſpread itſelf into the diſtracted ileum, and infeſted all the ſurrounding parts with a gangrene and mortification. But by what was ſaid before, it appears plainly enough, that the ſeat of this malady has been alſo found in other places of the inteſtines; and therefore Hildanus ſeems to have been over-haſty in aſſigning the perpetual ſeat of this incipent malady, ſince he even confeſſes that the opened bodies who died of this diſtemper ſmelt ſo intolerably, that he could hardly examine all particulars with exactneſs. In the body of a man who had long been afflicted with colicky pains that lay chiefly in the lower part of the abdomen, the gut cæcum was found fallen into the pelvis, where it very firmly cohered with the upper part of the inteſtinum rectum from the place of coheſion upward, the large inteſtine of the colon went reflected, ſo as to make an acute angle with the rectum, and ſtretched itſelf (from the liver) in the uſual manner under the bottom of the ſtomach, and from thence in its common direction terminated in the rectum. But here the cæcum and rectum with the parts adjacent, were found gangrenous in the place of their coheſion; and an ulcer was found in the ſaid coheſion, betwixt the cæcum and rectum, large enough to admit eaſily one's middle-finger[r]. The moſt certain obſervations therefore evince, that the ſame diſtemper may be alſo ſeated in the large inteſtines; whence

[r] Philoſophical Tranſactions. nº 422. p. 236. Abridgem. Vol. VII. p. 517.

whence it may seem strange that Hippocrates should say so little upon colicky distempers, who seems to have included these maladies all together under the description and general title of the Ileum. Yet these are very well distinguished by Aretæus, who judiciously observes, that various parts of the body are often accused, upon which the colon is lodged in its course, and answering to the different part of that intestine in which the malady is seated. "The pain sometimes "rises up as high as the ribs so as to take upon it, "at times, the resemblance of a pleurisy (whenever "these patients have also a fever); but sometimes "again the pain lies within the false ribs, either of "one side or the other, so as to afford the resemblance "of a pain in the liver or spleen. Sometimes again "the flanks, or sides of the abdomen, are the seat of "the pain; since the colon is very large, and extends "its circumvolutions on every side [s]." Moreover, he remarks those symptoms which invade such patients as have this inflammation seated in the lower part of the colon where it joins the rectum: for he says, "There are some also who have the pain seated upon "the os sacrum, extending thence into the thighs "and cremaster muscles of the testicles." Now although an inflammation of the rectum may likewise be readily granted to affect the neck of the bladder and adjacent seminal vesicles, yet the pains of the thighs and testicles here seem to be rather signs of a nephritical complaint, as we shall shew hereafter at §. 993. However, Galen [t] observes to us, that a violent pain of the colon is by physicians sometimes referred to maladies of the kidneys; and, on the reverse, that pains of the kidneys are sometimes ascribed to the colon. But then he confesses this mistake can do no great damage to the patient; and adds, *Therefore in the beginning of these complaints, the distinction is difficult betwixt them; but neither do they at that time require any great difference in their curative treatment* *. And

[s] Aretæus de Causis et Signis Morb. Acutor. lib. ii. cap. 6. p. 19.
[t] De Locis Affect is, lib. vi. cap. 2. Charter. Tom. VII. p. 508.
* Igitur ab initio horum affectuum distinctio difficilis est, quo tempore neque magnam præsidiorum differentiam ipsi requirunt. *Ibid.*

again: *But becauſe in the firſt attacks of theſe maladies, it is difficult for us to diſtinguiſh betwixt them, it does not therefore follow that we are to preſage any miſchiefs from thence; for they then require no difference in the remedies either external or internal, but thoſe alone ſuffice, which in both caſes relieve pain* †. The ſigns whereby we are to diſtinguiſh betwixt a nephritis and a colicky pain, will be hereafter declared, when we come to treat profeſſedly upon nephritical complaints.

Another thing to be obſerved in reſpect to a phlegmon of the large inteſtines, is, that they allow the malady to be more eaſily cured; whence Aretæus pronounces, "That in this complaint the danger is leſs "in proportion as the colon is more fleſhy, thick, "and longer able to ſuſtain the phlegmon, than the "ſmall inteſtines [u]." And Celſus appears of the ſame opinion, ſince he tells us, *But there are two painful maladies that invade the inteſtines themſelves; of which the one takes up its ſeat within the ſmaller, and the other within the larger. The former of theſe is acute, or of ſhort continuance; but the latter may hold out a conſiderable time* [w]. But he judges the malady to be ſeated principally about the cæcum; and therefore propoſes, that the pains are more frequently obſerved on the right ſide. But ſince the large inteſtines are deſtined to collect together the fæces, and retain them often for a long ſpace of time, therefore they are the better enabled to bear a diſtenſion from their contents, without much damage to them; nor are the ſmall inteſtines ſo ſoon diſturbed in their office when the obſtruction is ſeated in the larger inteſtines. Moreover, in theſe laſt there is a more eaſy and ready conveyance for medicines in the form of clyſters, to reach immediately the parts affected; from whence, therefore, it is apparent, the danger is juſtly to be eſteemed

† Quapropter in curatione nullum augurandum eſt damnum nobis evenire, quod in primo horum morborum inſultu difficulter illos diſcernamus; tunc enim neque externis, neque internis, differentibus egent auxiliis, ſed ſufficiunt ea ſolum, quæ dolorem leniant. *Ibid.*

[u] In loco modo citato.

[w] Intra ipſa vero inteſtina conſiſtunt duo morbi: quorum unus in tenuiore, alter in pleniore eſt. Prior acutus eſt: inſequens eſſe longus poteſt. *Lib.* iv. *cap.* 13. *p.* 221. *et cap.* 14. *p.* 223.

eſteemed leſs, and the cure more eaſy, when the malady is in the larger, and not in the ſmaller inteſtines.

But when the rectum is invaded with a phlegmon, the ſame ſymptoms ariſe as when the hæmorrhoidal veſſels are turgid with a thick blood, and ſo ſtop the paſſage of the gut, and compreſs the parts adjacent, as to intercept the inteſtinal fæces, while there is alſo a continual teneſmus or troubleſome inclination to void ſtools. From whence it is evident this malady muſt be often miſtaken for the blind piles; which are ſaid to attend, when all the ſymptoms which uſually accompany the ſwelled or bleeding piles infeſt the patient, without any apparent tumour of the anus outwardly, only the veſſels are dilated inwardly after the manner of varices; and this the more ſo, as the inteſtinum rectum is often inflamed by the ſwelling piles. Nor yet can a miſtake of this kind be of any very miſchievous conſequence, ſince both maladies require almoſt the ſame treatment: however, the acute fever, which is an inſeparable companion of inflammation, will in this no doubt afford a principal part of diſtinction. But ſince in men the inteſtinum rectum is contiguous with the neck of the bladder, therefore this laſt, being thence irritated, will often produce a troubleſome ſtrangury, as Hippocrates [x] hath obſerved to us: but that the ſame malady may ariſe from the ſwelling of the blind piles, daily obſervations in practice aſſure; and I have even known an entire ſuppreſſion of the urine from the ſame cauſe, and which was immediately cured when the ſwelled hæmorrhoidal veſſels broke open, and made a plentiful diſcharge of blood by the anus.

But it is apparent enough, that a phlegmon in the rectum muſt be ſtill more eaſily curable than one in the colon; as the efficacy of topical remedies, more eſpecially warm bathings and fomentations, may here be immediately applied to the affected parts; and the malady be here alſo longer ſuſtained without may danger of its being fatal, provided the whole tract of the inteſtines above be free from the ſame complaint. But

[x] Aphor. 58. ſect. v. Charter. Tom. IX. p. 230.

when the inflammatory matter, being reſolved, makes its way through the extremities of the dilated veſſels, and relieves the affected parts, it afterwards eſcapes from the body by ſtools, but not without pain and uneaſineſs; for which reaſon it is ſaid in the preſent aphoriſm to be carried off by a *dyſentery;* but by one that is mild or moderate, ſomewhat bloody, and bilious; for in that caſe the ſame kind of matter is expelled from the inflamed parts, as we obſerved in reſpect to the morbific matter concocted and excreted by expectoration or ſpittings to carry off a peripneumony, as to which ſee §. 830. But as the inteſtinum rectum is lined with plenty of mucus, that the fæces may be commodiouſly evacuated; therefore from the irritation of the inflamed gut there is here uſually a great quantity of the ſaid mucus evacuated; and the like increaſed diſcharge we ſee is alſo made in other parts, that naturally are ſupplied with mucus, if they are invaded with a phlegmon. Thus, for example, it is well known what quantities of mucus are excreted, when the tonſis, uvula, and palate, are inflamed; upon which ſubject ſee what was ſaid at §. 805. But a teneſmus, or perpetual and uneaſy inclination to ſtool, is here one of the moſt troubleſome ſymptoms, as Hippocrates hath obſerved to us in the following words: *If the inteſtinum rectum be inflamed, the patient is invaded with pain and fever, goes frequently to ſtool without voiding any thing, while the anus ſeems to fall down with the mucus or phlegm that abounds; and ſometimes even a ſtrangury or difficulty of making water will alſo attend, which diſtemper enſues when the mucus or phlegm of the body drains into the inteſtinum rectum*[y]. From thence we alſo underſtand the reaſon why Hippocrates[z] in another place ſays that a teneſmus turns into a dyſentery; namely, when the inflammation in the rectum excites a teneſmus, and

[y] Si rectum inteſtinum inflammetur, et dolor prehendat et febris, et ad alvum exonerandam crebro deſideat, nihilque dejiciat, et a pituita videatur anus procidere, interdum etiam urinæ ſtillicidium prehendat, qui morbus oritur, quum pituita ex corpore in rectum inteſtinum incubuerit. *De Fiſtulis, cap.* 5. *Charter. Tom. XII. p.* 143.

[z] De Morbis, cap. 2. Charter. Tom. VII. p. 533.

and then the diſtemper goes off by a mild or ſomewhat bloody dyſentery. As alſo why in another place [a] he obſerves, *in teneſmo ſanguinem et mucum ſecedere*, "that in a teneſmus blood and mucus are "diſcharged;" and ſoon after adds, *Ac fit quidem ex iiſdem a quibus et dyſenteria verum imbecilior et brevis et non lethalis*; "and it ſprings from the ſame cauſes "with a dyſentery, but weaker; and is neither fatal "nor of long duration." For it is to be noted, that a dyſentery is troubleſome, but not always miſchievous; even ſometimes it is ſalutary, when it carries off the matter of the diſeaſe, as Hippocrates obſerves to us in general, when he ſays, *For theſe kinds of diſcharges cure thoſe diſeaſes that are before formed in the body; the old complaints they carry off by a longer continuance, and the more recent ones they may remove within a fewdays* [b].

Having thus conſidered what relates to the difference of this malady, according to the various parts of the inteſtine in which it reſides; it remains next that we review thoſe particulars which regard the cure.

§. 964. THIS malady being known to be preſent by the fore-mentioned ſigns (§. 959, 960.), the cure muſt be immediately attempted by the moſt powerful endeavours; to be accompliſhed, 1. By large and repeated bloodlettings, as before in a pleuriſy (§. 890.) 2. By a diligent uſe of laxative, diluent, and cooling clyſters, often repeated, to the number of three, four, or more in a day. 3. By continually drinking of the like laxative, diluent, and cooling liquors, with a prudent interpoſition of opiates, and of ſuch medicines as are found to be contrary to the particular cauſe (§. 959.) 4. By fomentations of the like kind, applied to the whole abdomen;

[a] De Affectionibus, cap. 7. ibid. p. 628.

[b] Hujuſmodi enim egeſtiones citiam eos, qui prius ſunt in coporibus, morbos ſanant; antiquiores quidem diuturniore tempore, recentiores autem in paucis diebus ſubmovere poſſunt. *Prædictionum lib.* ii. *cap.* 13. *Charter. Tom. VIII.* 821.

abdomen; more eſpecially of living animals that are young and of ſound health, ſplit open and applied. And in the mean time, 5. By a careful avoidance of all things acrid, forcing, or heating, taken either as drinks, foods, or medicines; together with motion of the body, or paſſions of the mind. 6. By holding on in the ſame courſe, until the malady is completely quelled or removed, without having made any returns during the ſpace of three days.

The intolerable pains, and the imminent danger of a ſuddenly fatal gangrene, in the preſent malady, call immediately for the moſt powerful and ready helps; and therefore a ſpeedy recourſe muſt be had to all the known remedies or aſſiſtances which reaſon and experience have taught us to be effectual in this urgent complaint.

1.] How efficacious a remedy blood-letting is for the cure of inflammation, has been already often declared; and the univerſal conſent of all the beſt phyſicians confirm the utility of it. But, in the cure of the preſent malady, Aretæus [c] very well adviſes no remedy to be uſed but what is equal in ſtrength and ſpeedineſs of operation to the urgency of ſo dangerous a complaint; and therefore he directs a vein to be opened in the arm with a large orifice, that plenty of blood may be ſuddenly exhauſted even till the patient faints away. For he very juſtly had ſuch an idea of the violence of the pains in this malady, as to reckon it a great matter to obtain even a moment's reſpite by throwing the patient into a deliquium from large bleeding, although it might not remove the cauſe itſelf of the diſtemper. But then he only applauds this audacity of blood-letting, where the cauſe of the malady appears to be a phlegmon; for if there be no inflammation, he adviſes this diſcharge to be omitted. But yet, if the cauſe of the malady be a mere cramp, if it be not ſpeedily relieved by emollient and nervous medicines,

a

[c] De Curatione Morbor. Acutor. lib. ii. cap. 5. p. 105.

a true inflammation is to be feared as the conſequence; and therefore, in this caſe alſo, blood-letting may be allowed, only in a more moderate quantity. More than this, as we declared at §. 141, Galen applauds copious blood-letting, not only for ardent fevers and violent inflammations, but alſo for the relief of the moſt ſevere pains. If therefore the ſeverity of the pain urges, although there be no acute fever or violent heat of inflammation with it, blood-letting will however be of uſe to prevent a phlegmon, which is always the conſequence if the pain continues long. The eminent Dr Simpſon [d] aſſures us, he had opened a great number of perſons deceaſed of a volvulus or painful ſtoppage in the bowels, and always found that the inteſtines were inflamed. From hence we therefore juſtly conclude this malady to be always allied to inflammation, either as the antecedent cauſe, or as a conſequent and ſpeedy effect. But the neceſſity of blood-letting to be repeated, is pointed out to us by the violence of the pain, fever, and heat; upon which ſubject we treated copiouſly enough at §. 890, n° 1. where we deſcribed the cure of a Pleuriſy.

2.] What conſiderable uſes emollient and cooling clyſters have towards moderating the too great violence of fevers, was declared at §. 610: and therefore in the preſent caſe they may be of ſervice, ſince the reſolving of an inflammation excited in the body can only be hoped for when there is a ſedate motion of the humours (ſee §. 386.) Again, if the ſeat of the phlegmon be in the larger inteſtines, the moſt emollient fomments may be applied immediately to the inflamed parts, where they will relax the ſtuffed-up veſſels, and dilute what is impervious. But where the ſmall inteſtines are inflamed, then indeed clyſters cannot naturally penetrate ſo far as to reach the part itſelf; yet the large inteſtines being filled with ſuch liquors will apply them as a warm bath to all the adjacent parts, and by that means be of ſervice. For there is nothing ſo ſerviceable for relieving cramped or convulſed parts as the application of warm and emollient remedies;

[d] Medical Eſſays, Vol. V. part ii. p. 664.

remedies; from whence one may alſo hope at the ſame time for a ſafe and effectual relief of the pain, (ſee §. 234.) Barley-water, oat-gruel, decoctions of linſeeds, *&c.* with an addition of honey and linſeed-oil, will ſatisfy this indication. Celſus [e] recommends *percolatum ptiſanae cremorem cum oleo et melle, ſic ut praeterea nihil adjiciatur*, "the ſtrained cream of bar-"ley-gruel, mixed with oil and honey, without any "other addition." And if the pain ceaſes not by that, he orders three or four cups of warm oil to be thrown into the bowels by the anus. But how efficacious ſweet and warm oil is to relieve pains that ariſe from a diſtraction of nervous parts is apparent from what Galen experienced in himſelf, as we related it at §. 164: for which reaſon Aretæus [f] directs, after the fæces are evacuated, to inject warmed oil with juice of rue; *illud enim, ſi intro moretur, fomentum inteſtinis propitium eſt;* "becauſe, if it ſtays within the bowels, it will "perform the office of a foment to them." But theſe ought to be often repeated, to relieve ſo ſevere a pain, and relax the convulſive ſtrictures upon the bowels. Sometimes indeed, although but rarely, there is ſuch a cramp or conſtriction of the anus, that even the pipe for conveying the clyſter can gain no admittance: which the celebrated Hoffman has obſerved [g]. In that caſe, the anus ought to be anointed with the moſt emollient liniments or unguents; or it may be fomented by ſitting in a perforated chair over the warm vapours of a bath until it relaxes.

3.] All the relaxing, attenuating, and cooling remedies that were recommended for a Pleuriſy, will be likewiſe proper for the preſent complaint: but as an inflammation of the bowels is commonly attended with cramps, therefore all the moſt emollient remedies will be jointly convenient. For the ſame reaſons too a prudent uſe of opiates is here recommended; ſince we know not of a more powerful relaxer of convulſed parts than opium, as daily experience confirms to us.

But

[e] Lib. iv. cap. 13. p. 222.
[f] De Curat. Morbor. Acut. lib. ii. cap. 5. p. 105.
[g] Medicin. Ration. Syſtemat. Tom. IV. part i. ſect. ii. cap. 12. p. 552.

But even theſe will not be convenient, unleſs blood-letting, and the uſe of clyſters, have been premiſed, to reduce the incrementive ſtate of the phlegmon: for without ſuch precaution, it is poſſible, that, while the pain is rendered inſenſible by opiates, the cauſes of it may yet operate, and deſtroy the affected parts unexpectedly by a gangrene. For thus Aretæus [h], after copious blood-letting, and drinkings of warm water with oil, oily clyſters, foments, and the like, recommends anodyne medicines, more eſpecially the giving in a draught a larger portion than uſual of the viper medicine; which appears to be the theriaca of Andromachus, who altered the mithridate of Damocratis, by an addition of vipers-fleſh, with an increaſe of the quantity of opium. It is alſo to be obſerved, that he orders the doſe to be larger than uſual, that it might the more powerfully quiet the pains and the cramps. Trallian [i] has alſo recommended a diſcreet uſe of opiates when the pains are violent or preſſing: But he prudently adds, "provided the powers are ſtrong;" for when this malady inclines to be fatal, the pulſe becomes weak and intermitting, as will be ſhewn at §. 969. while a gangrene follows, with a ſudden extinction of all the ſevere pains, and alſo of life itſelf. Now, if opiates were given in this caſe, the ſudden ceſſation of the pain that denotes the gangrene, would be aſcribed to the opiate given; and probably the death of the patient likewiſe, with great infamy to the phyſician. Sydenham [k], who is ſo univerſally eſteemed for his candour, and moſt exact obſervation in diſeaſes, made uſe of the ſame method; namely, after copious blood-letting, he gave a doſe of his liquid laudanum; but if peccant humours, or corrupt remains of what had been ſwallowed into the ſtomach, cauſed any oppreſſion, he firſt ordered ſome thin liquor to be rejected again by vomit for cleanſing the ſtomach. And the ſame is alſo the advice of Aretæus. But, in the more violent pains, Sydenham ſcrupled not to give his laudanum in large, and in repeated doſes:

[h] De Curat. Morb. Acut. lib. ii. cap. 5. p. 106. [i] Lib. x. cap. 1. p. 578. [k] Sect. iv. cap. 7. p. 260.

doſes: and even in another place [l] he ſays, that if the pain and vomiting returned, after blood-letting and the uſe of a purgative, the ſtools yet remaining obſtinately arreſted or bound up, he gave then a paregoric every four or ſix hours, "until the bowels perfectly "recovered their tranquil ſtate, and in conſequence of "that reſumed their natural motion downwards." For at ſuch times, the cramp being removed from the bowels by an opiate, a cathartic will excite them to ſtools, although in other caſes a narcotic uſually binds up the inteſtines.

But ſince it was declared at §. 959, that this malady moſt frequently ariſes from ſome acrid matters of various kinds; therefore in the cure, ſuch remedies are alſo to be choſen as are of a nature oppoſite to the known acrid cauſe. If it be an acid acrimony, which we commonly meet with upon the bowels of infants, that excites this diſtemper; in that caſe, things which abſorb and weaken acids are to be adminiſtered: but, on the contrary, if any putrid matter gives birth to the complaints, thoſe things that are already acid, and eaſily aceſcent, will afford the beſt remedies, more eſpecially when they are plentifully diluted with water. In other caſes, where the nature of the acrimony is doubtful or unknown, or where the fretted membranes can only ſupport the ſofteſt liquors; then watery, oily, mucilaginous, and emollient decoctions, will be always ſerviceable, as they weaken all acrimony.

4.] For here every thing capable of rendering ſervice are to be adminiſtered at one and the ſame time, for eaſing the pain, and preventing a dangerous inflammation following. This is what Aretæus alſo recommends to us in the following words: *Ubique enim quiſque omia dolorem levantia faciens juvat;* "for all kinds of "medicines from every quarter, which relieve pain, "will be of uſe here [m]." So likewiſe Celſus commends *calida cataplaſmata admovere, eaque imponere a mammis uſque ad inguina et ſpinam; ac ſaepe mutare: Imo totum hominem in calidum oleum demittere*---"the "application

[l] In Schedula Monitoria de Novæ Febris Ingreſſu, p. 672. [m] De Curat. Morbor. Acutor. lib. ii. cap. 5. p. 106.

" the application of warm cataplasms, laid on even " from the breasts down to the groins, and to the " spinal bones of the loins; and to be often renewed " or changed: or even to immerge the patient all over " in hot oil [n]. This advice he gives, that all the parts may be relaxed as much as possible, and that a softness may be introduced throughout all the contents of the abdomen, as a state the most opposite to convulsive cramps or constrictions in which all the parts are found with a rigid tightness or hardness: for thus I have observed, in a man who died in two days time of this malady, that the whole belly formed a flat, because the abdominal muscles had by a tetanos or rigid cramp violently compressed all beneath them. Hence it is, that Sydenham [o] observes to us, that the bowels are sometimes infested with such a constriction or tight compressure, as if they were tied round with a roller. But at §. 234, it was proved, from the observations of many ancient physicians, that oily liquids made warm afford one of the best remedies for relieving or curing a tetanos, if the rigid or convulsed parts are continually fomented with these. Also Celsus [p] recommends, both for the cure of a tetanos, and for the cure of the present malady, *in calidum oleum totum descendere, vel in aquam calidam, in qua fœnum græcum decoctum sit, et adjecta olei pars tertia*; " to let the patient descend " with his whole body into a bath of hot oil; or into " hot water, in which fenugrec-seeds have been boil- " ed, adding to the liquor a third part of as much " oil." But there are many observations recorded, which shew the great usefulness of bathing in the present malady †.

But more especially here is recommended that natural warmth which is administred by the application of slaughtered living animals that are sound or healthy, and laid reeking upon the abdomen, whereby at the same time the subtle vapours that exhale from the animal perform the office of a vaporous bath. Also the

[n] Lib. iv. cap. 13. p. 222. Hippocrat. de Morb. lib. iii. cap. 13. Charter. Tom. VII. p. 588.
[o] Sect. iv. cap. 7. p. 259.
[p] Lib. iv. cap. 3.
† Medical Essays, Vol. III. p. 373, &c.

cawl of a ſlaughtered beaſt, taken and applied warm from the belly, being repleniſhed with a ſubtle or penetrating and emollient oil, will in this malady afford a good remedy; only it cannot perhaps be always readily had at the time when this urgent complaint calls for it. It was the cuſtom of Sydenham [q], in his cure of an inverſion or ſtoppage of the bowels, called the *iliac paſſion*, always to direct a puppy to be ſlit open, and applied to the naked belly, during two or three days of the malady.

Moreover, Aretæus and Celſus [r] have recommended the fixing of numerous cupping-glaſſes, without ſcarifications, unleſs there be a call for drawing blood this way; for then Celſus adviſes to ſcarify two or three of the cuppings, and by the reſt to draw forth only perſpirable or inſenſible vapours: but upon this head, you may conſult what was ſaid as to the uſe of cupping-glaſſes, affording preſent relief to flatulent pains of the belly, at §. 650.

5.] From all that has been ſaid concerning the cure of inflammation in general, it is ſufficiently apparent that none but ſuch emollient and reſolvent medicines can be here ſafely uſed as have no acrimony, nor power to increaſe the circulation; and that the uſe of heating medicines muſt be here highly miſchievous, as was before ſhewed at §. 961. And yet we read, in the practice of phyſicians of the higheſt note, that acrimonious medicines, even of conſiderable ſtrength, have been often ſucceſsfully adminiſtered, eſpecially purgatives; and many other ſubſtances given, to reſtore the free paſſage, and for the contents to move on, through the tube of the obſtructed bowels; which is therefore a point that deſerves our conſideration.

For it is to be obſerved, that in this caſe, beſides an inflammation of the bowel, there is often ſome obſtacle that blocks up the tube of the inteſtine, and which requires to be removed in order to effect a cure. If this obſtacle proceeds from an inflammatory ſwelling ſolely, it is then apparent that the ſoft medicines here recommended will be proper, and theſe alone; becauſe an irritation of the inflamed parts, by the ſtimulus of purgativ

[q] Sect. i. cap. 4. p. 91.

[r] In locis modo citatis.

purgative medicines, or of other acrid matters, muſt always do miſchief. But if ſome obſtructing matter blocks up the cavity of the inteſtine, whether that exiſted before the phlegmon, or gathered there during the time that the inflammatory ſwelling ſtraitened the light or tube of the gut, it muſt in both caſes be removed before a cure can be affected. Moreover, if a volvulus or introverſion of the gut be formed, that muſt be extricated to reſtore the free light or cavity of the bowel. Now it is well known, that what we ſwallow into the ſtomach is from thence driven forwards, even down to the anus, by the periſtaltic or vermicular motion: from whence it ſeems, that phyſicians have deſigned to remove the obſtacles with the ſtimulus of purgatives, by increaſing this propulſive motion of the inteſtines; that thus any reſiſtance exceeding the natural and eaſy worm-like motion, might be urged or promoted even with a convulſive force. Moreover, we ſhewed before, in the experiments of Peyerus upon the guts of a frog, that a volvulus or introſuſception of the gut would unfold itſelf again by the vermicular motion of the inteſtines; and therefore phyſicians ſeem to have hoped, that an increaſe of the ſaid motion by purgatives would have the ſame effect by turning out the infolded or confined parts. Others have here given the moſt weighty metals to be ſwallowed by the patient, that the gravitation or preſſure of theſe deſcending through the cavity of the inteſtines might remove the reſiſting obſtacle; and in this way various thing have been tried, ſometimes with good effects, and ſometimes with bad. It deſerves therefore to be examined in this place, what are the dictates of prudential ſkill, and what the precepts of inſtructed practice.

We are certainly at firſt to treat an inflammation upon the bowels in the antiphlogiſtic method by bloodletting, fomentations, emollient clyſters, *&c.* and therefore it was no laudable practice in thoſe who have treated this malady in its crude or forming ſtage with ſuch forcing medicines, before theſe were premiſed. This is the courſe upon which the wiſe

ancients steered their practice in the present malady. Hippocrates [s] drew blood from the head and from the arms, placed the patient in a tub of hot water, anointed him with oil, and applied warm and moist foments; after this he attempted to solicit a discharge of the parched-up fæces by the use of a suppository to the anus, and then he threw up a clyster into the bowels. Where these had no effect, "he then ordered wind "to be blown into the belly by a pair of smith's bel-"lows, that both the abdomen and the cramped "bowels might be distended; and then, withdrawing "the bellows, a clyster to be injected, not prepared "of things very warm or heating, but of such as dis-"solve or mollify the fæces: then the patient was to "sit in a perforated chair over a sponge of hot water, "charged with the ingredients of a clyster." We here see the most efficacious antiphlogistic method of cure was premised, before any attempts to dilate the sides of the intestines by inflation, to allow the fæces a descent. Moreover, from another place it appears [t], that he used this method of cure, "when, "the excrements being parched up into lumps or "heaps within the gut, and pituita or phlegm col-"lected about them, the intestine becomes swelled by "by the said aggregated fæces, and therefore admits "none of the medicines that are drunk in by the "mouth, but rejects them by vomiting; neither does "the gut receive what is administered below in "the form of clysters." Trallian [u], in treating upon the cure of the present malady, expressly advises as follows: "If it be a cold colic, or an iliacal affection, "without any preceding inflammation, in that case it "may be of use to practise the cure by inflation; but "if the bowels are locked up by an inflammation an-"tecedent, the method of cure by inflation will be "not only useless, but even prejudicial." And the same caution he gives in respect to purgatives to be administered [w], when he pronounces, "But if the "colicky

[s] De Morbis, lib. iii. cap. 13. Charter. Tom. VII. p. 588. [t] De Affectibus, cap. 7. ibid. p. 626. [u] Lib. x. cap. 1. p. 582. [w] Ibidem, p. 589.

" colicky complaint ſprings from a phlegmon of the " inteſtine, you will never audaciouſly uſe purging " in ſuch caſes; eſpecially in the beginning, while " the phlegmon is yet crude, or not advanced to a " concoction: for thoſe who have here made no " ſcruple to adminiſter purging medicines, have been " inſtrumental in occaſioning great miſchiefs, and even " death, to their patients." So likewiſe Aretæus [x], after a bold blood-letting even till the patient faints, followed with the uſe of clyſters, foments, cuppings, theriaca, *&c.* at laſt adds, " But if neither the pain " remits, nor the wind or fæces gain any diſcharge, " it is then neceſſary to give a purgative medicine " called hiera." Sydenham [y], treading in the ſame ſteps, at length gave a purgative when the pain and vomiting had entirely ceaſed for two or three days. In another place [z], after copious blood-letting premiſed, he preſcribed on the next day a lenient purgative; but it was in ſuch a caſe of this malady as had in its beginning neither the pain ſo fixed, nor the vomiting ſo frequent, nor yet any very obſtinate inſenſibility or reſiſtance of the bowels to all purgative operation: but where he believed ſtronger purgatives to be neceſſary, he then firſt gave anodynes to allay the cramps of the bowels [a].

But purgatives have been alſo adminiſtered in form of clyſters, after having firſt premiſed the uſe of antiphlogiſtic or cooling medicines; and this practice has been ſometimes followed with the deſired ſucceſs: For it is known that a quadruple doſe of a purgative in clyſters performs the ſame effects with a ſingle doſe taken by the mouth. But the moſt effectual remedy that Sydenham [b] could find, was an inflation of the ſtrongeſt ſmoke of tobacco into the bowels by way of clyſter. Although Hoffman [c] determines nothing upon his own experience in behalf of this practice, yet he affirms that it has a great virtue in opening the bowels of horſes much bound up; and ſays he has known

[x] De Curat. Morbor. Acutor. lib. ii. cap. 5. p. 106. [y] Sect. i. cap. 4. p. 91. [z] Sect. iv. cap. 7. p. 260. [a] Schedula Monitoria de novæ febris ingreſſu, p. 672. [b] Ibidem, p. 671. [c] Med Ration. Tom. IV. part. ii. p. 335.

the common people to gain inſtant eaſe in the ſevereſt pains of the bowels, by ſwallowing the ſmoke of tobacco. Heiſter [d] obſerves, that theſe fumes ought to be continually urged in by the anus, until the patient perceives a violent inclination to ſtools; and that it will be more eſpecially of ſervice when the ſmoke is taken from the ſtrongeſt or fatteſt tobacco. Now this celebrated author confeſſes he has found this remedy ſo effectual in the cure or reduction of incarcerated ruptures, that it never gave him any occaſion to make uſe of the knife. He has therefore ſupplied us with the draught of a proper inſtrument for the commodious adminiſtration of ſo uſeful a remedy.

As to the uſe of heavy metalline bodies to be ſwallowed in this malady, authors differ greatly one from another. Helmont [e] boldly pronounces, that no one can periſh of the iliac paſſion if they do but ſwallow muſket-bullets of lead, which by their ſuperincumbent weight may drive forward the obſtacle ſeated in the inteſtine; and that theſe would be more expeditiouſly uſeful, as they were larger, and a greater number of them ſwallowed, while the patient in the mean time keeps walking, or in an erect poſture. But if we conſider, that the gut is expanded above the obſtructed part; therefore, theſe heavy bodies ſwallowed would lodge in the ſaid dilated parts of the gut, without preſſing directly with their weight upon the obſtacle. But if a volvulus is alſo preſent, of that ſort in which the upper contracted part of the gut is received into the lower more dilated portion; in that caſe, they may increaſe the miſchief, by urging the upper arreſted part of the gut further into the lower and ſuſcipient portion next dilated: therefore, it is not without good reaſon pronounced by Sydenham [f], that theſe weights do but little ſervice, and are frequently the cauſe of conſiderable miſchiefs. Thoſe who conſider the various convolutions or windings of the bowels, will perceive there are no ſuch great benefits to be expected from the ſwallowing of theſe as many perſons ſeem to believe.

[d] Inſtit. Chirurg. part. ii. p. 1101. [e] De flatibus, ſect. 31. p. 339.
[f] Sect. i. cap. 4. p. 91.

lieve. However, the drinking of quick-silver, altho' equally disapproved by Sydenham [g], is yet applauded by many physicians of very considerable note. Van Heers [h] assures us he often had given it without any damage; and that in a moment's time it ran through the bowels, bringing with it the obstructing fæces that lay in its way. Zacutus Lusitanus [i] informs us, that many were cured of the most deplorable iliac passions by drinking three pounds of quick-silver in hot water, which even saved them from imminent death. And indeed, that it may be taken very safely, if it gains a speedy discharge from the body, we are taught by numerous observations; and since it is the heaviest known body next to gold, it may be able to clear the passages: and, perhaps, it is the safest of all when taken in the greatest quantity; for then it lies in a collected body, and runs off more easily and expeditiously by stool; whereas, when it lies a long time in the body, and gains an entrance into the blood by the bibulous veins of the intestines, it may then produce very different consequences. Some years past the drinking of this ponderous fluid was recommended as a panacea in England, and in Scotland [k], where it was the custom to take an ounce or two of the argentum vivum every morning, which by many was continued for a number of weeks, without increasing any of the sensible evacuations. But in the mean time it has appeared, that although it did no immediate mischief, yet after some time it brought on very bad effects; and the distempers of those who work with quick-silver in the daily practice of their trade, and which often prove both surprising and incurable, sufficiently demonstrate how cautious we ought to be of this practice. The celebrated Hoffman [l] gave, in the present distemper of the bowels, half a pound of the purest quick-silver to a woman of forty, with some fat broth taken before it, and after it some flesh-broth, with a few ounces of the oil of almonds, and ordered gentle walking afterwards about

[g] Ibid. [h] Observat. Med. lib. i. obs. 2. p. 37. [i] De Medicor. Princ. Historia, lib. ii. hist. 97. p. 358. [k] Medical Essays, Vol. III. p. 387. [l] Med. Ration. Tom. IV. part. ii. p. 335.

about the chamber. Her bowels were opened within five hours from the taking, and about an ounce of the mercury came away in the ſtools, which relieved all the ſymptoms; but for above fourteen days after her ſtools continued mixed with parts of the quick-ſilver: and what is the moſt remarkable, when her ſtrength was recovered, ſhe was for above a month troubled with tremblings of the limbs, and great feebleneſs in her legs. Now obſervation informs us, the ſame complaints attend thoſe who incautiouſly work or dabble with quick-ſilver; and therefore one may reaſonably ſuſpect here, that the mercury not eſcaping all at once from the body, but ſtaying long within the bowels, produced theſe miſchiefs. But notwithſtanding this, it muſt be owned, that, in ſo dangerous a malady as that before us, the uſe of ſuch a remedy, however to be ſuſpected, ought to be put in practice, when we have a proſpect of avoiding preſent death by it.

But we read likewiſe of other things tried with ſucceſs by phyſicians in the preſent malady, which yet at firſt view may ſeem rather prejudicial. For it is apparent from what is above delivered, that emollients, with relaxing and diluent drinks, *&c.* with foments prepared from the ſame materials, are here highly applauded by all phyſicians; from whence it may ſeem ſtrange, that things actually cold ſhould appear by experiment or obſervation to be able to make a cure when all other things have been tried in vain, and be able even to recover the patient when every body has deſpaired of him. Hoffman[m], having in vain tried the uſe of blood-letting, clyſters, emollients, and various other remedies, for the relief of violent pains of the abdomen, in a woman who had a ſuppreſſion of the menſes from a fright; it was propoſed by the phyſician that conſulted with him, Naboth, to try the drinking of cold water; to which ſeemingly harſh method he conſented, rather than appear unſociable and preciſe. But this ſtrange method of cure ſucceeded more happily than he expected, two cups of the water being given ſeveral times in the day while the body and

[m] Ibid. p. 349.

and feet were well covered over; for the copious ſweat that enſued was followed with a comfortable ſleep, and a removal of all the pains. But Naboth alſo aſſured him, that he had often in the ſame caſe ſucceſsfully applied linen cloths dipt in cold water. There is in the ſame celebrated author a caſe of the like kind related out of Septalius, in which the aforeſaid emollients above recommended being uſed for a Spaniſh nobleman without ſucceſs, Septalius had recourſe to oppoſites; and although death ſeemed to be at the door, from the pulſe being no longer perceptible, and from the cold ſweats, yet he ventured to give plenty of water that was refrigerated with ſnow, and found that it was followed with the moſt deſirable effects. But as this method of cure may ſeem raſh to many, it may be of uſe I believe to confirm it by another caſe. A man, aged twenty-ſeven years, began to complain of a ſlight pain in his belly, with an unuſual coſtiveneſs; for which various clyſters, purgatives, and other medicines, were uſed, without being able to procure any ſtools, while in the mean time all things taken into the ſtomach were rejected by vomit. The warm bath was tried, the warm ſkin taken from a living lamb was applied to the abdomen, and repeated blood lettings were not neglected, but all without any relief; and now the caſe being adjudged deſperate, the patient was on the eighth day of the malady carried into a cold room, with the lower half of his body uncovered, and then in every ſecond of time a quantity of cold water was poured upon his feet, gradually aſcending, until at laſt the affuſion was carried as high as the pubes; and during this he ſometimes walked, ſometimes ſtood upon his feet on the cold and wet pavement, alternately plunging his feet into a veſſel full of cold water. By this method the patient recovered ſtrength, and within half an hour was relieved: but ſoon after, his pains returned as ever, he vomited once, his belly ſwelled more than before, and he had the moſt excruciating gripes; but theſe were in a few minutes time followed with a copious and liquid evacuation by ſtools, intermixed with ſome indu-

indurated fæces, which gave him great relief; and afterwards the fever decreasing, and there being a continuance of copious discharges of indurated fæces, he escaped from the most imminent danger[n], in the space of three days from the adhibition of the above method of cure. There is in the same place likewise a wonderful case related, wherein an obstinate costiveness, that had continued forty-three days inflexible to numerous remedies, was yet relaxed in the space of ten minutes, by pouring cold water twice every minute upon the legs and thighs.

But also in the ancient physicians, in several places, we observe, that they likewise sometimes made use of this practice. Trallian[o], in the cure of a colicky malady arising from hot bilious humours, says, that he used cold water to his patients, whose powers were strong, and whose viscera had no defect; nay, that he had even successfully thrown up things actually cold by the anus. Hippocrates[p] recommended the pouring on plenty of cold water for a cramp, in a young man of a fleshy habit, in the midst of summer; and the same likewise for an erysipelas not ulcerated[q]. He even informs us[r], that, in convulsions, the affusion of much cold water relieved and terminated the pains. But in this malady there is both an obstinate cramp or convulsion of the intestines, and an inflammation of them, with immense pains.

It appears then, from what we have now related, how much may be sometimes effected by a bold method of practice in the most despaired-of cases; and if any one shall presume to condemn the like as rash attempts, let him remember what Celsus has formerly pronounced in treating upon the ancient method of giving cold water in fevers, practised by Petro: But *since it is impossible for the same methods to be suitable for all cases; those wherein reason or skill affords no cure are yet often relieved by hazardous experiment*[s]. And again,

[n] Medical Essays, Vol. V. part ii. p. 893. [o] Lib. x. cap. 1. p. 585.
[p] Aphor. 21. sect. 5. Charter. Tom. IX. p. 206. [q] Ibidem, p. 208. Aphor. 23. sect. 5. [r] Ibidem, p. 310. Aphor. 25. sect. 5.
[s] Sed, cum eadem omnibus convenire non possint, fere quos ratio non restituit, temeritas adjuvat. *Lib.* iii. *cap.* 9. *p.* 138.

again, *The properties or affections of the same diseases are at various times different even in the same persons; and those who are sometimes in vain attempted to be relieved by the most promising or agreeable methods, are yet often recovered by their contraries* [t].

But it may be justly accounted a practice still more audacious to cut into the abdomen, pull forth the intestines, search out and replace the involuted part of the gut by the fingers, and then to replace the bowels, and sew up the belly. Yet this is a practice proposed to us by Barbette [u], rather than to give up the patient to certain death. Even in Bonetus [w] we read of the operation being actually performed by a bold young surgeon, upon a lady of note, and with the most happy issue: and formerly the late celebrated anatomical professor in Holland, Nukke, caused the operation to be performed by a very expert surgeon upon a woman of forty years old; who recovered, and lived above twenty years afterwards [x]. The like operation we read to have been ordered by Paraxagoras, who even, as Cœlius Aurelianus [y] tells us, directed the gut to be cut asunder, and afterwards sewed up again when the dung was taken out of it: but then adds, *Magnificam mortem Paraxagoram magis, quam curationem, voluisse scribere.* For, in a case of this difficulty, who can say he is able to determine whether the stoppage be from an involution of the gut or not? or who will pretend directly to find out the affected part of the bowel that is the seat of the malady? For it is usual, when this malady approaches to its worst state, for the pain and distension to be spread throughout the whole abdomen. From whence it is evident enough, that nothing but the most pressing circumstances can persuade to the practice of so cruel an operation, in which the belly must be cut into, the convolutions of the guts overhauled, and the seat of the obstruction searched out in the living patient.

6.]

[t] Quin etiam morborum in iisdem hominibus aliæ atque aliæ proprietates sunt, et, qui secundis aliquando frustra curatus est, contrariis restituitur saepe. *In Præfatione, p.* 19.

[u] Anatom Practic. lib. iv. cap. 1. [w] Anat. Pract. lib. iii. sect. 14. Tom II. p. 228. [x] In Dissert. Inaug. Corn. Henr. Velse, p. 19. [y] Acutor. Morbor. lib. iii. cap. 17. 244.

6.] Although, by the methods hitherto directed, the pains may have been removed, and the fever ſubdued; yet we are ſtill to conſider, that the portion of the bowel, which was the ſeat of the malady, may for a long time be liable to an eaſy relapſe, by its ſenſibility; by which even ſlight irritations from the ingeſted nouriſhments, that are either acrid or difficult of digeſtion, may cauſe a return of the pain, cramp, and inflammation, as before. For all things taken into the ſtomach muſt paſs by theſe ways: of which Sydenham [z] being well aware, he has therefore pronounced this malady to be more than others extremely ready to return; to prevent which, he recommends a very thin diet almoſt entirely of chicken-broths, and in ſuch quantities as will barely ſuffice to maintain life. For it ought to be one care not to load the bowels with too great quantities even of aliments that are light or thin and the eaſieſt of digeſtion; and therefore ſuch ought to be given repeatedly in ſmall quantities, that ſo the bowels, formerly overſtrained and dilated, may have opportunity to contract themſelves, and gradually recover their loſt tone. Hence it is, that Celſus [a] cautions againſt the uſe of aliments that are ſtrong, heavy, or flatulent; and even after the pain and fever have vaniſhed, he allows only water for the drink, leſt the as yet weakened bowels ſhould be injured: admoniſhing likewiſe, *Omne vinolentum, ſive acidum, huic morbo alienum eſſe;* "That all vinous and acid liquors "are foreign, or bad for this malady." And for a long time after the recovery he adviſes abſtaining from bathings, walkings, and other exerciſes of body: *Nam facile id malum redire conſuevit; et cum frigus ſubit, ſive aliqua jactatio, niſi bene jam confirmatis inteſtinis, revertitur:* "For that this is a diſtemper which uſually "returns very eaſily; and, unleſs the bowels are pre-"viouſly well confirmed in their ſtrength, upon ta-"king cold, or ſome exerciſe of body, the patient "relapſes."

§. 965.

[z] Sect. i. cap. 4. p. 92. et ſect. iv. cap. 7. p. 266. [a] Lib. iv. cap. 13. p. 222, 223.

§. 965. WHEN the preceding malady (§. 959, 660.) has been neglected to be duly treated, or has continued conſtant and violent for above three days together; if then there follows an irregular ſhivering throughout the body without any known cauſe, with a dull pain of heavineſs in the affected part, inſtead of the firſt or moſt acute, ardent, and diſtracting pain, this will be a ſign that an abſceſs is there about to form itſelf; from whence (when it breaks) in about the ſpace of a fortnight there will be a diſcharge of matter: If this matter flows into the capacity of the abdomen, it there becomes productive of numerous miſchiefs, like thoſe mentioned in §. 939: but if it flows into the cavity of the inteſtines, it occaſions a purulent dyſentery more or leſs copious, and of longer or ſhorter continuance, according as the nature of the ulcer there formed ſhall influence or govern the flux; but from thence the membranes or coats of the bowels are often ſloughed or caſt off entire in the ſtools, and frequently a conſumption is produced.

Concerning thoſe ſigns which inform us an inflammation of the internal parts is changing into a ſuppuration, we have already often treated in the hiſtories of the acute inflammatory diſtempers before given; ſo that all we formerly propoſed on this ſubject will be here likewiſe true. But an abſceſs formed in the bowels may diſcharge its contained matter two ways; either into the capacity of the abdomen, or into the cavity of the inteſtines. What miſchiefs are to be feared from the matter of a broken abſceſs draining into the capacity of the abdomen, we before declared at §. 912, and 939. But when the matter drains into the cavity of the bowels, it finds a ready way out from the body in the ſtools, ſo that by the purulent dyſentery which follows the patient is often recover-

ed, and gains a complete cure ſooner or later according to the different magnitude and condition of the abſceſs, as every one may eaſily perceive. But as ſometimes the inflamed bowels grow together with the peritonæum, the abſceſs may in that caſe break outwardly, after the ſame manner as we obſerved in treating upon a phlegmon of the Liver and Stomach. However, ſuch an outward rupture in the preſent malady ſeems very ſeldom to happen, or at leaſt the writers of obſervations have very rarely mentioned it. Aretæus [b] indeed aſſures us, that in a certain patient he cut open an abſceſs of the colon in the right ſide, near the liver, from which a great quantity of matter was diſcharged, and ſome of the matter came away likewiſe through the kidneys and bladder for many days, the patient afterwards recovering. But if ſuch an abſceſs remains long unbroken, the matter, becoming more thin and acrimonious by reſt or confinement, will be drunk up by the bibulous veins which open throughout the whole extent of the confining membranes of the purulent bag, from whence being mixed with the blood it may there cauſe a purulent cacochymia (§. 406.), from whence a tabes or conſumption is to be feared, as we ſhall ſhew at §. 1214.

But ſince a phlegmon or inflammation (ſee §. 374.), and the ſuppuration which follows it, are the moſt frequently ſeated in the cellular ſubſtance, which ſubſtance anatomiſts have plainly diſcovered in the inteſtines; it ſometimes appears, that a ſuppurative tumour in the cellular membrane of the gut cauſes a ſeparation of the internal villous coat from the other tunics of the bowel, ſo that it ſhall be afterwards diſcharged by ſtool, with its entire figure reſembling the hollow tube of the inteſtine, and not without ſtriking great fear and ſurpriſe into the patient and his attendants, who, ſuppoſing the gut itſelf to be come away, imagine there can be no further hopes left of a recovery. This accident is alſo very fairly obſerved by Aretæus to happen likewiſe in dyſenterical perſons: "Sometimes an oblong body, ſomewhat like a ſound gut,

[b] De Cauſis et Signis Morbor. Diuturn. lib. i. cap. 9. p. 37.

" gut, is discharged entire, without being divided " into several parts; and therefore occasions the igno- " rant to mistake it for a real intestine. But the true " case is this: The coats of the intestines, like those " of the stomach, are formed in two strata, one of " which is spread obliquely over the other; and, " therefore, when the diploë or spongy connection of " these is dissolved, the inward coat being sloughed, " or cast off from the rest, is excluded from the " bowels, while the outer coat left behind becomes " more fleshy, and heals up with a scar or smooth " cuticle, whereby these patients recover, and live " afterwards in health; but the intestinal tube will " allow this exfoliation only in its lower part, be- " cause there the coats are of a fleshy substance [c]." The moderns have furnished us with like observations [d], which serve to confirm what Aretæus has now told us; for the inner coat of the intestinum rectum was cast off, and the patient afterwards recovered health. But that the same or a like separation may also happen throughout the whole tract of the intestines, seems highly probable; although in that case the sloughed membranes are rarely continued in one entire tube, but often appear in form of an unshapen mucus by the time that they are excluded in the stools: but if the said mucous substance be put in clean water, a membranous and vascular structure then plainly appears. The celebrated Sympson [e] saw in the body of a person who died phthifical, and with a fistula of the anus, that the villous coat of the bowels was in several places absent, and many of the abraded fragments were to be seen within the cavity of the intestines. But this unhappy person before death could bear almost no solid food, by reason of the uneasiness he perceived from it in his stomach and bowels; and for three weeks before his death he could only bear water, drank in small quantities at a time. In the same place it is also proved by many other observa-

[c] Ibidem, lib. ii. cap. 9. p. 61. [d] Tulp. Observat. Medicar. lib. iii. cap. 17. Anton. Benevoli observazione 18. p. 150. [e] Medical Essays, Vol. V. part ii. p. 655, &c.

tions, that the inner coat of the inteſtines may be ſeparated by ſlight cauſes, and be again renewed: for even the fæces much indurated, and urged through the large inteſtines, have been obſerved to make an abraſion of it; and in thoſe who have long lingered in dyſenteries, a great quantity of ſuch mucus has been ſeparated, although afterwards they have been reſtored to a perfect ſtate of health.

§. 966. WHEN the ſaid abſceſs or ſuppuration of the gut (§. 965.) is once known to be preſent, immediately all nouriſhments that afford much fæces of a thick, hard, or acrimonious nature, muſt be prohibited; and the patient muſt be ſupported or fed entirely upon broths, that are boiled with roots moderately deterſive; balſamic and deterging decoctions are likewiſe to be drank plentifully, and thrown into the bowels under the form of clyſters; and laſtly, the medicinal Spaw-waters are to be taken plentifully as a drink, and the uſe of them continued till the cure is completed.

When the ſigns teach us that ſuch an abſceſs is formed in the bowels, all the like methods are to be purſued which were formerly preſcribed at §. 402. The maturation, therefore, of the crude inflammatory matter is to be promoted; and ſince the moſt convenient diſcharge for the matter is that through the cavity of the bowels, whereby it may be diſcharged in the ſtools, therefore clyſters of decoctions from emollient plants often injected, and the like decoctions often drank, will be of ſervice to relax and mollify the ſurface of the bowels. But when, from the eaſement of the pain, and diſcharge of the matter by ſtools, we know the abſceſs to be broken, we are then gently to deterge the ulcerated parts, and bring them to the ſtate of a clean wound diſpoſed to heal or conſolidate; and this by infuſions of the vulnerary plants with honey, ſuch as agrimony, flewellin, golden-rod, St. John's-wort, *&c.*

But

But above all things care muſt here be had not to allow any thing to be taken into the body, under the name of foods or drinks, that is of an acrimonious nature, or eaſily diſpoſed to degenerate and acquire an acrid ſtate by heat and reſt within the body; and all things that afford groſs fæces are likewiſe to be avoided. The broths of fleſh-meats will therefore afford the beſt nouriſhment, as they are very ſufficient to ſuſtain the patient's ſtrength without encumbering the bowels with any thick or indurating fæces. For the ſame reaſons the whey of milk, well clarified from its curdy parts, will be very ſerviceable, while milk itſelf cannot be uſed, becauſe it is ſo readily apt to turn ſour, and leaves many groſs or hardening fæces within the bowels, as plainly appears in infants that are nouriſhed only by the breaſt-milk. But in the fleſh-broths may be boiled the roots of vipers-graſs, vetches, ſuccory, and the like, (of which a form may be ſeen in the Materia Medica, at the number of the preſent aphoriſm); but then theſe broths are to be afterwards ſtrained, that nothing of a groſs conſiſtence may paſs the bowels before the ulcer is healed. But a copious uſe of infuſions that are vulnerary, with the whey of freſh milk, and medicinal Spaw-waters, will conduce to waſh out from the blood the abſorbed parts of the collected matter; while they dilute and ſoften all the other humours diſcharged into the bowels, more eſpecially the bile, that they may cauſe leſs irritation upon the ulcerated bowel. When the ulcer is once cleanſed, the chalybeate waters will by their gentle aſtringency promote the cicatrization or final cure of the parts affected: and when for ſeveral days there has been obſerved no diſcharge of the matter by the ſtools, nor any pain remaining in the belly, then more ſolid foods may be gradually given, of barley, rice, bread, the fleſh of young animals, *&c.* until at length the patient may venture upon the diet which was cuſtomarily uſed in health.

§. 967. BUT if this phlegmon of the bowels ſprings from the moſt violent cauſes (§. 959.)

(§. 959.), and has produced the moſt ſevere ſymptoms (§. 960.), it may then eaſily form a gangrene (§. 388.) in the parts of the bowel affected (§. 959, 963.): which miſerable conſequence will be afterwards fatal.

Here conſult what has been ſaid upon a Gangrene at §. 960, which for the moſt part follows very ſpeedily after a violent inflammation of the bowels.

§. 968. WHICH approaching gangrene we eaſily foreſee, from having obſerved the cauſes and ſymptoms preceding (§. 967.), if at the ſame time too there be no kindly reſolution (§. 963.), nor apparent ſigns of making a cure (§. 664.).

If a fixed pain ſhall continue very ſevere in one certain place, with a violent fever and ſtubborn conſtipation of the bowels, while every thing taken into the body is returned by vomitings; or if the cure was neglected in the beginning of the malady, or no relief obtained from it; we thence conclude, that ſuch a phlegmon of the bowels inclines to a gangrene.

§. 969. BUT that this gangrene is formed, we are taught by the proper ſigns having gone before (§. 968.), followed with a ſudden relief to the ſevere pains without an apparent cauſe; the pulſe in the mean time continuing weak, intermitting, with cold ſweats, and a fetid dyſentery or flux of ichorous humours, appearing grey, livid, or black, and a diſcharge of the ſtools that is inſenſible: from whence a quiet death ſpeedily enſues.

The great danger of ſuch a ſudden remiſſion of the violent pain, without an apparent cauſe, in acute inflammatory maladies, has been before ſhewed in our hiſtory

hiſtory of a Pleuriſy at §. 904. The ſame is alſo true of the preſent complaint, and ſometimes deceives thoſe who are leſs ſkilful. For the moſt ſevere pain, and obſtinate conſtipation of the bowels, uſually attend an inflammation of them: but when the phlegmon tends to an inevitable gangrene, both the pain ceaſes, and the bowels generally become relaxed with looſe ſtools; from whence thoſe who attend upon the patient, and ſometimes their phyſician, imagines the patient to be out of danger, when even death ſpeedily follows. But here the cadaverous viſage, the leaden colour of the lips, the coldneſs of the extremities, with anguiſh, an inflated belly, and extreme weak and quick pulſe, afford to the ſkilful phyſician undoubted ſigns of inſtant death. Therefore Hippocrates pronounces, *A dolore vehementi partium circa ventrem extremorum refrigeratio, malum;* "That a coldneſs of the extremities "following after a violent pain in thoſe parts or viſce-"ra which border upon the abdomen, is a bad or fa-"tal ſign [f]." For when a gangrene invades the parts that are inflamed, the pain ceaſes, and the ſtretched membranes that were before hard become flaccid; and from thence a free courſe or paſſage through the gut to the anus is reſtored, while its fabric is diſſolving by a gangrene. But the moſt experienced phyſicians have always entertained the worſt apprehenſions, when the bowels, before conſtipated, become relaxed with ſuch ſigns. Accordingly Baglivi has given us the following practical axiom: "If a flux of "the bowels comes upon a violent iliac paſſion, the "patient will be taken off within a few hours; for "all the parts of the bowel are then mortified, from "whence proceeds the fatal flux. And in like man-"ner the patient is alſo ſoon taken off, when a tight "diſtenſion of the belly attends an iliac paſſion, and "the flatulencies moving to and fro diſcharge them-"ſelves in the flux [g]." The ſame is alſo confirmed to us by Tulpius [h], and many others.

But a ſurpriſing caſe has taught us, that the feculent

[f] Aphor. 26. ſect. 7. Charter. Tom. IX. p. 304. [g] Prax. Med. lib. i. p. 110. [h] Obſervat. Med. lib. ii. cap. 41. p. 161.

lent matter confined in the bowel, ſhut up by a volvulus or introſuſception, has by a rupture of the inteſtine paſſed into the capacity of the abdomen; and by there ſtagnating has eaten its way through the inteſtinum rectum, in which an opening has been found in the deceaſed body that gave a diſcharge of the contents from the abdomen through the anus: but here the diſtemper is equally fatal, although it may be ſomewhat longer protracted; for in this caſe the patient ſurvived to the thirteenth day, although the ileum inteſtine had a threefold volvulus or introſuſception, which is a caſe that rarely happens [i].

But the matters diſcharged by a fatal purging or flux, in a deſperate iliac paſſion, before the patient's deceaſe, have the moſt intolerable ſmell; partly from their long retention within the bowels, and in part from increaſed putrefaction by the febrile heat, to which may be added in ſome meaſure the corrupt ſordes or filth that drains from the gangrenous or mortifying parts. But the ſtools are then commonly evacuated without the patient's knowledge, which is condemned by Hippocrates as fatal, as was formerly ſhewn at §. 719.

§. 970. BUT when this painful malady of the bowels has once advanced to ſuch a gangrenous ſtate, it hardly ever admits of a cure; for any curative treatment muſt ſucceed before this, and can finally be only of ſervice when it is conducted after the preſcribed method at §. 966.

For ſo much of a part as is invaded by a gangrene putrefies; and the only cure lies in procuring a ſuppuration round the extent of the gangrene, to ſeparate betwixt the dead and the living parts of the veſſels, ſee §. 444. But while this ſeparation is made, the gangrenous cruſt diſſolves into a putrid liquid, after a manner that plainly appears to our view in external parts of the body. Now if ſuch a putrid liquid drains into the capacity of the abdomen, all the viſcera that fill that capacity will be ſoon corrupted by it: for it is very

[i] River. Obſervat. cent. 3. obſ. 26. p. 63.

very rarely that a gangrene occupies only the internal ſurface of the bowel, and leaves its outer coats ſtill ſound and living; for in a caſe of that ſort, the matter may be excluded from the body by ſtools. It is true, we are taught by numerous obſervations (ſee §. 317.) that a very conſiderable portion of the gut has been loſt by a mortification, and the patients have afterwards ſurvived it with a tolerable good ſtate of health: but then always in ſuch caſes there is a way outwards to diſcharge the gangrenous ichor or matter, and allow the hand of the ſurgeon to remove the corrupted parts, and faſten the ſound ones either together, or to the margins of the outward opening, in ſuch a manner as to form an artificial anus or door for the inteſtinal fæces to be excluded, which muſt otherwiſe have been collected, together with the gangrenous matter, within the capacity of the abdomen. Moreover, when a gangrene follows from a phlegmon of the bowels, all the vital powers are immediately ſunk or depreſſed; from all which miſchiefs duly conſidered, it will plainly enough appear, that the gangrene is here ſeldom or never curable.

But ſince every gangrene is only curable by a ſuppuration formed to throw off the dead parts; it is therefore evident, the ſame method of cure will be here required, as was before recommended at §. 966. The uſe of the Peruvian cortex for ſtopping the progreſs of a gangrene was formerly ſhewn at §. 447, whereby the ſeparation of the dead eſchars, or corrupted parts, is often ſo effectually promoted; and while that was writing, I had as then got no opportunity of aſſerting the efficacy of the ſaid practice upon my own obſervations: But at this time I can affirm, by a great number of my own proper experiments, that immortal thanks are due to the celebrated ſurgeon Ruſhworth, for the publication of this remedy. But although the progreſs of a gangrene be thus ſtopped, and a laudable ſeparation of the dead parts procured, yet the malady will be equally far from a cure, unleſs the union or continuity of the inteſtinal tube can be accompliſhed.

§. 971.

§. 971. BUT if the uſual cauſes (§. 392.) ſhall have here produced a ſchirrhus, we have then different ideas to form of this malady, which we are therefore clearly to underſtand.

What the cauſes are which produce a ſchirrhus from inflammation, were before declared at §. 392. But ſince great caution is neceſſary for the treatment of a ſchirrhus in this malady, therefore it will be of the laſt importance for us to know the ſigns demonſtrative of ſuch a termination.

§. 972. IF therefore a phlegmon with its ſymptoms (§. 392.) be ſeated in the parts which we call the bowels or inteſtines (§. 959, 963.); and if it there long continues, neither ariſing to the higheſt violence (§. 960.) nor yet terminating by a reſolution (§. 963.) by concoction or medicines (§. 964.) nor by a ſuppuration (§. 965.) but leaves after it a ſort of ſtupidity, with a conſtant weight and diſtraction of the parts; we are from ſuch grounds led to think a ſchirrhus is formed in the bowels.

When therefore the ſigns teach us an inflammation is formed in the bowels, yet not of ſo great violence as immediately to produce the worſt conſequences, but to hold on a long time upon the parts; by degrees receiving relief indeed, but yet ſo that always ſome footſteps of the firſt malady will be left, or the complaints may return at intervals, although in a more ſlight manner, whenever nouriſhments are taken ſo as to offend by their greater quantity, or by their being more difficult to digeſt; likewiſe, when there are no apparent ſigns of a ſuppuration formed: then one may reaſonably expect a ſchirrhus; which muſt always give uneaſineſs, although not very conſiderable if it be but of a ſmall bulk. In ſuch caſes, the patients uſually perceive a weight and a diſtraction of the parts, more

eſpecially

eſpecially when they dance, or go ſwiftly down a ſtaircaſe: but it is rarely that the ſchirrhus can be outwardly felt or perceived, except in very lean perſons, and not even in thoſe unleſs it be grown to a conſiderable bulk; but before it will have gained ſuch a bulk, it muſt have produced many complaints that are the effects of a ſchirrhus, and alſo the ſigns of a ſchirrhus preſent, as they are reckoned up in the aphoriſm next following.

§. 973. BUT if the ſaid ſchirrhus follows its own inclination (§. 392.), and produces its appropriated effects (§. 486.) within theſe parts (§. 959, 963.), it then generates a multitude of grievous and ſtubborn miſchiefs; ſuch, chiefly, as a numbneſs, weight, and perpetual increaſe of the ſwelling, whereby the cavity of the inteſtine becomes diminiſhed or ſtraitened; from whence the chyle and fæces ſtagnate, and exert their forces, chiefly acquired by putrefaction and ſtagnation of their matter, upon the reſiſting parts of the bowels: from thence ſpring either an obſtruction or an introverſion of the gut, a ſtoppage to whatever is taken into the ſtomach, an iliac paſſion or volvulus, the dry-gripes or a dyſentery from the irritating acrimony, convulſions, hickups, vomitings, continual pains, a fever, a waſting of all the fat, and then a conſumption of the whole habit for want of nouriſhment, with death itſelf.

So long as a ſchirrhus lies dormant without degenerating towards a cancerous malignity, the ſwelling is hard, but without pain (ſee §. 392.), and is therefore eaſily tolerable: but even then it may give conſiderable offence by ſtraitening the tube or bore of the inteſtine, and may even ſometimes go ſo far as wholly to block up the gut when its increaſing bulk ſhall have compreſſed all the ſurrounding parts. Hollerius [k] has obſerved, that the gut colon has been gathered up into

[k] De Morbis Internis lib. i. cap. 41. p. 325.

to a hard ſchirrhus like a cartilage in that part of it which lies next to the kidney, by which its whole internal cavity was intercepted; but on the right ſide the colon was extremely large in this patient, who expired after many years of pain in the bowels. Ruyſch [1] found the gut rectum ſo much thickened, that it amounted to above an inch in its membranes, which were ſo much indurated as to make him doubtful whether he ought to call their ſubſtance by the title of fleſh or cartilage: but the cavity of the gut itſelf hardly exceeded that of a ſtraw; and there was ſo firm a coheſion of it with the os ſacrum, as required the uſe of a chiſſel and mallet to make the ſeparation. In the ſame place he alſo relates another caſe of the inteſtines hardened into a ſchirrhus. At §. 486, we have alſo related a remarkable caſe of a noble child, in whoſe deceaſed body was found a ſchirrhus of the gut ileum, near the part where its final extremity is inſerted into the gut colon. Theſe are ſufficient to ſhew, that by the moſt certain experience the preſent malady may have a ſeat in the bowels; and it is even highly credible, that ſuch ſchirrhous ſwellings lurk oftener within the bowels than is commonly believed, and there gives birth to the moſt ſtubborn chronical maladies. I viſited the mother of a noble family, near the ſeventieth year of her age, who very rarely had any ſtools, although ſhe had a good appetite, and eat plentifully: but by the ſixth, ſeventh, and ſometimes the eighth day, great anguiſh would ariſe, with a pain of the belly; after which ſhe rejected by vomit a great quantity of mixed matters, which plainly ſhewed the remains of ſuch foods as were taken within that interval of time. After ſuch an evacuation, her appetite returned as before; and ſhe found herſelf tolerably well, until after a like ſpace of time the ſaid maladies would again returns. But ſhe had ſupported theſe complaints for twelve years; and although there was not an opportunity allowed to inſpect into her body after death, yet there ſeems to be juſt grounds for ſuſpecting ſuch a ſchirrhous obſtruction: and ſince that, I have ſeen ſome other

[1] Obſervat. Anatom. Chirug. obſ. 95, 96. p. 88, &c.

other cafes of the fame kind in the courfe of my practice. But fo long as the fchirrhus remains dormant or benign, the pains are not continual, but return only at intervals; and in the beginning of thefe cafes the patients only perceive fuch uneafinefs when they too take much or too folid food; but afterwards the fame complaints return oftener, as the fchirrhus advances in bulk.

But it appears plainly enough, that the ingefted nourifhments, being thus accumulated by the impeded courfe of them through the bowels, muft by diftending the inteftines create in them a pain; fince they corrupt by long ftanding, and by putting on a ftate of acrimony irritate thefe parts. At the fame time we may alfo perceive, that the malady may be fo much longer fupported without a lofs of the ftrength, as the fchirrhus is feated lower, or more diftant from the pylorus. But at length the inteftines having been often overftrained by the accumulated contents, by which their digeftive power upon the aliments becomes greatly weakened, and their due abforption of the chyle diminifhed; then follows a flow confumption, and death; unlefs all the complaints are thus brought fooner to the like period by a degeneration of the fchirrhus into a cancer, or from a new inflammation brought upon the bowels from the compreffure or diftraction.

§. 974. HERE, then, medicines prove but of little efficacy, of what kind foever they may be: but the regimen of diet may be comformable to §. 966.; and by fuch a regimen the fchirrhus of the bowels may be a long time fupported without any great mifchief to the patient.

How difficult it is to cure a fchirrhus, even in thofe parts which allow free acceſs of the hands to treat immediately the feat of the malady with foments, fumigations, *&c.* we formerly fhewed at §. 490; from whence, therefore, it readily appears, what little rea-

ſon we have here to hope for ſucceſs even from the moſt boaſted remedies. For if the incipient ſchirrhus that here forms itſelf cannot be reſolved by the friendly warmth and vapours of the abdominal viſcera, aided by the motion of the diaphragm and abdominal muſcles, and the reſolving power of the bile and pancreatic juice continually derived into the affected bowels, what ſmall expectations muſt we have from other remedies? Some chemiſts have indeed boaſted themſelves to be poſſeſſed of ſecrets able to reſolve ſchirrhi; but experience has ſhewn us their attempts have been in vain tried upon the ſchirrhi of external parts. And therefore nothing remains here but to render a malady tolerable to the patient, which we are unable to remove. But a ſchirrhus of the bowels is more eſpecially injurious to the patient by ſtraitening or blocking up the free paſſage or light of the inteſtine; and therefore only thoſe nouriſhments are to be taken which are the moſt liquid and of the lighteſt digeſtion, to prevent ſuch injury: for which reaſon the ſame diet will be convenient here, as was before recommended at §. 966.

§. 975. BUT if the ſaid ſchirrhus is by the reſpective ſigns (§. 497, 498.) known to be formed in theſe ſenſible parts, and to reſult from the cauſes enumerated (§. 492, 495.), the patient is then perceived to be under the moſt deplorable circumſtances, of a cancerous caſe incurable: which circumſtances or ſymptoms are intelligible from comparing §. 498, with the nature, office, and nervous ſtructure of the inteſtine; but the chief of them are, A moſt ſharp and ſtubborn dyſentery, that continually ſcalds, erodes, and conſumes all the parts through which it flows, with moſt cruel convulſions, and pains that exceed all human ſufferance, holding on ſtill fixed in the ſame parts, till at length death follows as the welcome reliever from ſuch miſeries.

What

What thoſe cauſes are which convert a ſchirrhus into a cancer, we formerly declared at the numbers referred to in our text; and in the ſame place we alſo related the great miſchiefs that enſue from a cancer in external parts, where all the circumſtances fall under our inſpection by the eye. If then we conſider that a cancerous ichor (which corrodes the adjacent ſkin, and diſſolves the dreſſings of lint almoſt like aqua-fortis) does in the preſent caſe diſtil into the cavity of the bowels, we may thence readily conceive what dreadful miſchiefs muſt enſue, inſuperable by all the efforts of art, and only to be terminated by death itſelf.

§. 976. IF upon the firſt appearance of a known ſchirrhus (§. 972.) it be treated in the proper method (§. 974.), that will greatly conduce to prevent this malady (§. 975.) But if this be imprudently attempted to be cured by the uſe of acrimonious remedies (§. 490, nº 3. and §. 495, 502.), more eſpecially by violent purgatives; in that caſe, a cancer ſprings up and rages in theſe parts: But then nothing can be here allowed but mere drinks of the whey of new milk, ſpoon-meats of mealy decoctions, or entirely of fleſh-broths, with the yelks of eggs; to which add the injection of clyſters extremely emollient, prepared only from a decoction of linſeeds, with the leaves of officinal night-ſhade, or with white poppy-heads; and laſtly, by the uſe of medicines that defend from acrimony, are anodyne or moderately opiate, and ſuch as do not eaſily change into a ſtate of acrimony.

If a ſchirrhus be known to be preſent, from the above mentioned ſigns, nothing remains but to avoid all things which are apt to turn a ſchirrhus into a cancer; concerning which ſee what we before advanced in the hiſtory of a cancer, §. 495. But it is not uncommon

common for theſe patients, being moved by a ſenſe of the oppreſſing weight in their belly, to urge their phyſicians to preſcribe purgatives to carry off the troubleſome load: and if the ſkilful phyſician refuſes their imprudent requeſt, they often retreat to boaſting pretenders, who practiſe with the moſt violent emetics and purgatives; and then from the uſe of ſuch remedies the ſame conſequences enſue, as from the rough rubbings and irritations of an old outward ſchirrhus by the hands, by which it is ſoon made a cancer. In the preſent caſe, then, there is plainly no other method of cure left, but what is merely palliative, to render the malady more eaſily tolerable by a mitigation of its ſymptoms. All things, therefore, ſwallowed into the ſtomach, ought to be ſo ſoft and free from acrimony, as to cauſe no pain even to the eye when they are dropt into it: and at the ſame time they ſhould be of a nature not in the leaſt apt to turn acrid in the ſtomach from the heat of the body. Pure water will make one of the beſt drinks, or the clarified whey from new milk: and during the uſe of the latter, the patient ſhould be ſupplied with abſorbers of acids finely levigated, that, if the whey ſours upon the ſtomach, it may have its acrimony immediately weakened. The yelks of eggs, which we know give no pain to a recent wound when they are ſpread over it, will for the ſame reaſons be here conveniently adminiſtered in ſoft fleſh-broths, boiled with rice or barley. But in order to weaken the ſharp ichor that drains into the bowels, the moſt emollient clyſters with anodynes are injected; for by theſe, not only the offending acrimony is diluted, but the ſides of the inteſtines are covered over and defended by the ſoft mucilage. Internally, the like mucilaginous decoctions may be given to advantage; with opiates, for quieting the ſevere pains; concerning the uſe of which you may conſult what was ſaid at §. 202, 229.

Trallian [m] ſeems to have obſerved a cancer of the bowels, with a very bad dyſentery that thence followed: "If an inflammation or an ulceration takes place "in

[m] Lib. viii. cap. 8. p. 433.

" in the bowels, the following ſigns or ſymptoms go " before. Towards the beginning or firſt ſtage of " the diſtemper are thrown out diſcharges that ap- " pear bloody, and afterwards filthy: in many caſes, " there is firſt a diſcharge or flux with broken ſkins, " which is afterward followed by a more unctuous " or laudable matter, which, however, is filthy, and " of a moſt intolerable ſmell, when the caſe is malig- " nant: but when at length the diſtemper has dege- " nerated into a cancer, the excrements are varie- " gated with black, and intermixed with ſome par- " ticles of putrid fleſh diſcharged by ſtool. More- " over, there is a fever, attended with great thirſt, " and an averſion to food, from whence the body falls " away: great pain, with wakefulneſs, infeſt the pa- " tient, and the gripes are alſo joined with noiſy " rumblings in the bowels." This deſcription ſuffi- ciently agrees with the appearances obſerved in pa- tients afflicted with the preſent malady. Peter Salius Diverſus [n] aſſures us he ſaw a cancer in the colon, with which the miſerable patient was tormented for many months, and at laſt periſhed with an iliac paſſion.

§. 977. FROM what has been here advanced, it appears at length, why in practice we ſo often meet with pains of the gula and mouth of the ſtomach; alſo of the liver, ſpleen, pan- creas, the inteſtines ileum and colon; which are ſo ſevere, fixed, ſtubborn, intolerable, and incu- rable. From hence it alſo appears, that, in every true volvulus or iliac paſſion, there is always ſome real or mechanical cauſe that abſolutely hinders the paſſage of the contents through the tube of the inteſtine, in whatever manner the ſaid cauſe may ariſe, whether in the fabric of the gut itſelf vitiated, or in the matters which lodge within its cavity, of which there have been various kinds found. Alſo, How manifold a dyſentery may be, and how very ſurpriſing its diſcharged matter:

[n] De Affectibus Particularibus, cap. 9. p. 280.

How unjuſtly, in theſe diſtempers, ſome particular kind of hectical acrimony in the blood is accuſed; for the removal of which imaginary cauſe, injurious medicines are often given: How much prudence or caution is required in a phyſician that is about to adminiſter a purgative in great pains of theſe parts: What the nature is of that incurable over-purging that often follows in ſome patients afflicted with this malady: What a diverſity of remedies and methods of healing are required to the cure of dyſenteries: How vain, fraudulent, and miſchievous it is to recommend any one thing as the proper remedy of fluxes; or even to recommend one general courſe of treatment for them all: With an infinite number of the like particulars.

All who have large practice know how often there are moſt difficult complaints, that give no leſs perplexity to the phyſician, than pain and uneaſineſs to the patient; and in which the trials of various methods are to no effect. It was formerly ſhewed at §. 797, where we treated upon a Schirrhous Quinſy, that when the gula is become indurated, or compreſſed by hard tumours ſurrounding, it may be gradually ſo far ſtraitened as to be at length unable to tranſmit either food or drink, in conſequence of which the patient lingers with a ſtarving conſumption that is fatal. The moſt troubleſome heart-burns or ſtomach-pains are often preſented to us, inflexible to all remedies, and only capable of ſome relief from the uſe of lenients. But practical obſervations have taught us an infinite variety in theſe pains. I have viſited thoſe who found themſelves eaſy enough with an empty ſtomach: but within an hour or two after a meal, they have been ſubject to three or four hours of miſerable torment and after this the pain has again ceaſed, or at leaſt greatly abated. On the contrary, I have known other patients who have found themſelves worſe upon an empty

empty ſtomach. I have ſeen women daily troubled with a very bad heart-burn, that has left them when, being with child, the gravid womb has by its diſtenſion filled the capacity of the abdomen; and has returned to them again after they were delivered. But it is well known, that the ſtomach changes its ſituation when it is full; and that, in gravid women, the diſtended womb diſplaces moſt of the viſcera. Now it may be queried, Whether ſuch a ſchirrhous tumour does not leſs preſs and diſtract the adjacent parts, with thoſe to which it coheres, while the weight of it is ſuſtained by the aſcending womb; and whether ſomething of the ſame kind does not alſo happen with reſpect to the full ſtomach? at leaſt this ſeems to be not without a reaſonable probability. But if we examine into what has been taught us by the opening of dead bodies, we often find, that ſchirrhous ſwellings and ulcerated cancers have been the cauſes of ſuch ſtubborn and painful maladies. In the deceaſed body of a man, who had been for near ſix years troubled with a pain of the cardia or ſtomach, there was found a large tumour that filled a great part of the thorax, and deſcended along with the gula through the diaphragm, and extended itſelf behind the ſtomach even as far as the pylorus, ſo as to compreſs both the openings of the ſtomach: but of ſuch a hard conſiſtence was this tumour, that it could hardly be cut through with a knife [o]. In the body of a phthiſical youth, who had been afflicted with a conſiderable burning or pain above the left orifice of the ſtomach, inflexible to all remedies, the celebrated Heiſter [p] found a perforation of the gula of an inch wide, ſurrounded with a black or gangrenous margin, and ſeated at the diſtance of two inches above the diaphragm. Caſes of the like ſort may be alſo ſeen in our Hiſtory of a Schirrhus, §. 484. But moreover, it appears from what we advanced upon inflammatory maladies of the other viſcera, that in them likewiſe ſchirrhous ſwellings might ariſe; and therefore expert phyſicians have juſt grounds to ſuſpect theſe ſtubborn caſes in chronical pains of the lower

[o] Medical Eſſays, Vol. III. nº 26. p. 356.

[p] Acta Phyſico-Medica Academ. Natur. Curioſor. Tom. I. p. 392.

lower belly, and to be very cautious not to exaſperate the ſaid complaints by a rough or imprudent treatment.

That in every true volvulus or iliac paſſion, *&c.*] We formerly ſhewed at §. 959, that Sydenham would have the malady called properly the *iliac paſſion*, when acrimonious humours are thrown, by the raging of a fever, into the cavity of the ſtomach, and continuous inteſtines; but if it aroſe from indurated fæces, or other ſuch cauſes, he would then have the complaint termed a *baſtard* iliac paſſion. But from what was before alleged at §. 960, it appears, that Hippocrates and Galen intend by this name ſuch an inflammation of the bowels or inteſtines as intercepts their paſſage or light, by which they are unable to ſend on any of their contents; and therefore their definition ſeems more eligible to be retained. Now ſuch a ſtoppage of the tube of the inteſtine may ariſe either from a tumour in the fabric or membranes of the gut itſelf, or from any tumour that compreſſes the inteſtine laterally, or from any impervious matters collected within the cavity of the inteſtinal tube; and if under ſuch cauſes a phlegmon of the bowels ſhall ſupervene, the malady is called *ileus*, or the *iliac paſſion*.

It is made apparent enough, by what we have before advanced, that the preſent malady may ariſe from tumours of the inteſtines that are either inflammatory, ſuppurative, ſchirrhous, or of a cartilaginous hardneſs. But various matters have been likewiſe found blocking up the cavity of the bowels. In ſome perſons who lead a ſedentary life, and feed groſsly on aliments that are difficult to digeſt, more eſpecially when there is alſo a weakneſs of the bile, ſuch obſtructing matters will be often collected in the duodenum, as that is a narrow and wrinkled gut, that there hardening, by an expreſſure of the more fluid parts, they at length plug up the cavity or paſſage of the inteſtine, and produce an iliac paſſion: and of this kind was one caſe that came under my obſervation; and a like inſtance was before given from Helmont, at §. 960. I obſerved this malady once ariſe in a girl, who had eat plenty of plums, and ſwallowed all their ſtones; but ſhe happily

pily recovered after it, by diſcharging an incredible quantity of the ſaid plum-ſtones. A like caſe is alſo to be read in Bonetus [q], but with a fatal termination: for there cherry and plum-ſtones, that were imprudently ſwallowed, killed the patient, after inducing the moſt intolerable miſeries for the ſpace of three years. A plum-ſtone was diſcharged by ſtool from a girl of twelve years old, covered over with a ſtony cruſt, after it had lain ſix years in the bowels, where it had for a long time been the cauſe of many complaints, and moſt ſevere colicky pains [r]. Now theſe obſtacles we ſee aroſe within the bowels, from things taken into the body. But even the natural mucus which lines the ſides of the bowels, being accumulated and thickened, may block up the cavity of the inteſtine, as appears from two obſervations of Fernelius, related before at §. 719. But it ſeems a principle confirmed by practical obſervations, that theſe obſtacles lodged in the large inteſtines are much longer tolerable then when they are ſeated in the ſmall ones; nor in either do they cauſe an iliac paſſion, without a conjoined inflammation.

How manifold and ſurpriſing a dyſentery may be.] It was formerly declared at §. 721, that the malady is properly called a *dyſentery* when a troubleſome flux of the bowels is conjoined with griping pains, and a teneſmus or frequent motion to ſtool, that gives the patient no ſmall uneaſineſs. Therefore all things acrimonious, corroding, and irritating to the bowels, whether they ariſe from things ſwallowed into them, or from humours of the body derived to them, bilious, atrabiliary, ichorous, cancerous, *&c.* may produce a dyſentery. From whence it is ſufficiently apparent, how manifold a dyſentery may be, in reſpect to the various cauſes that produce it. And even ſometimes theſe cauſes have a ſurpriſing ſubtility; and ſpread an inviſible contagion, that infects thoſe who are in health. It was before ſaid at §. 722, that a phyſician, by examining into the ſtools of a dying dyſenterical

[q] Sepulchret. ſive Anatom. Pract. lib. iii. ſect. 14. obſ. 17. p. 222.
[r] Medical Eſſays, Vol. I. n° 32. p. 301.

terical patient, fell ill with the ſame diſeaſe; and that even many perſons were infected who waſhed the linens that were fouled by ſuch ſtools. Whole armies are ſometimes ſeized at once by this diſtemper. It is true indeed, that ſometimes a ſaline cauſe or ſtimulus, vitriolic, arſenical, *&c.* may lie concealed in the waters and drinks; and ſometimes half-corrupted and frouzy corn may produce the ſame diſtemper, when the ſoldiers are obliged to feed upon the bread that is made of it; and at other times an imprudent cramming of undreſſed or raw fruits has been the apparent cauſe. But in the mean time, camp-phyſicians have obſerved, that a dyſentery will ſometimes ſpread, when the remote cauſe does not manifeſtly appear, but the nature of the infecting ſtimulus remains all the time unknown: and in ſuch the powers of the body will be often immediately ſunk at the firſt invaſion of the malady, not from any copious diſcharge or inanition, but from the poiſonous force of the infecting miaſmata or effluvia of the diſtemper, which even ſtifles all the ſtrength in perſons that were but a little before in the moſt perfect health.

How unjuſtly acrimony of the blood is accuſed in theſe complaints, *&c.*] It is well known, that, in a waſting of the body from hectical fevers, much good may be expected from a milk-diet with horſe-riding; but if a cancerous ulcer lurks within the ſtomach or inteſtines, while the body is continually worn out by pains, the malady will in that caſe be exaſperated by equitation. And even milk, as it is ſo apt to make indurated fæces, will be inconvenient in this caſe, although it might otherwiſe be lenient and uſeful. And if any one, from obſerving the very putrid condition of the fæces, ſhall here attempt to correct them by the adminiſtration of ſtrong acids, the painful parts will be miſerably exaſperated.

What caution is neceſſary to the uſe of purgatives, *&c.*] For it is often the cuſtom to acuſe ſharp humours or collected fæces, as if all pains of the belly aroſe conſtantly from ſuch matters; from whence the unſkilful believe, that nothing can be given more uſe-

ful

ful than purgatives to expel the offenſive matter. But if it appears, that the fore-mentioned ſigns of inflammation attend the ſaid pains, it muſt be evident, from what we have ſaid, how dangerous purgatives are, before the uſe of blood-letting and other ſuitable medicines for reducing the inflammation. But in chronical pains of the abdomen, there is alſo no leſs caution required in theſe reſpects; for they frequently ariſe from ſome ſchirrhus, which by irritation eaſily degenerates into a cancer.

What the nature is of that incurable over-purging that often follows this malady.] An hypercatharſis or over-purging is ſaid to attend, when a purgative medicine being given produces an exceſs of looſe ſtools or purgings. It was indeed a cuſtom among the ancient phyſicians to uſe the ſharpeſt and moſt griping purgatives, ſuch as hellebore, elaterium, euphorbium, *&c.* from which over-purgings much oftener enſued than with us; and accordingly we meet with ſuch caſes related in the Epidemics [s] of Hippocrates: and in his aphoriſms [t] he obſerves, it is a fatal ſign for hickups and convulſions to come upon the back of an hypercatharſis; namely, becauſe the body is ſoon exhauſted by a too profuſe and long-continued purging, or flow of looſe ſtools. But ſuch an hypercatharſis uſually happens in the preſent caſe, from a ſchirrhus that is ready to degenerate into a cancer, if it be irritated with purgative medicines; and then the continual drain of acrimonious or cancerous ichor, inceſſantly erodes and irritates the bowels to a continual flux or purging, that holds until the patient expires.

What a variety of remedies and methods are required, *&c.*] We a little before ſhewed how manifold or various dyſenteries may be; from whence it alſo eaſily appears, how different the methods of cure are required, conformable to the various productive cauſes. If it ſhall ariſe from half-corrupted foods, thoſe remedies that evacuate both upward and downward will be of ſervice, provided the viſcera are firm and ſound: and

[s] Lib. v. textu 13. et 29. Charter. Tom. IX. p. 337, 343.
[t] Aphor. 4. ſect. v. et Aphor. 41. ſect. vii. ibid. p. 196 313.

and if, after the putrid humour is rejected, either by nature or art, the bowels being crude and excoriated continue to excite a troublesome tenesmus or motion to stools, the most emollient decoctions, with Armenian bole-earth, sealed-earths, and the like sheathers of acrimony, will afford the most desirable effects; and this more especially when joined with opiates, which in such complaints most happily quiet the painful irritations. Sometimes the dysentery requires blood-letting, with the cooling method of cure, if it be conjoined with inflammation. But if the liver, being melted into a corrupt matter, in chronical complaints, shall discharge its ichor into the bowels, a vomit given in that case often occasions a fatal hypercatharsis. Or if the dysentery springs from the filthy ichor of a cancer in some of the viscera, the emollient and mitigative method alone can do service, as purgatives exasperate the incurable malady. If a healthy person be infected with a dysentery from the effluvia or smells that proceed from persons dying of the same distemper, in which case all the powers of the body are immediately extinguished by the received miasmata, powerful helps may be then had from Rhenish wine or vinegar, either simple, or medicated with the most penetrating aromatics; even by way of clyster, we have known vinegar usefully administered, when diluted with warm water: and like advantages may be also had from the use of sour whey given plentifully both as a drink and in the form of clysters. But on the contrary, when the dysentery springs from an acid acrimony in the bowels of weak infants, the principal treatment must be with such things as absorb and weaken acid acrimony. And therefore it is plain there can be no one specific or universal remedy for all dysenteries; and it is no less apparent, that a true or safe method of cure can only be deduced from a knowledge of the causes, comformable to which the treatment must of course be proportionably various.

Of

Of the APHTHÆ, or THRUSH.

§. 978. AS eruptions of the internal epithelium, which we call Aphthæ or Thruſh, appear in many acute diſtempers that have inflammations of the viſcera, it may be convenient for us in this place to treat briefly upon them.

The word which gives title to the preſent malady is indeed found in the ancient phyſicians, but they ſeem not to have always underſtood by it the diſeaſe upon which we here treat. They have frequently given this appellation to ſmall ulcers, ſeated in the interior parts of the mouth, which often appear ſolitary or diſtinct, or at leaſt but few of them aſſembled together; and theſe have a white or yellow ſpeck in their middle, but all round that ſpeck there is redneſs, inflammation, and pain. If we read Aëtius's deſcription [u] of Aphthæ, it will plainly appear, that by this appellation he calls ſuch little ulcers as we have now deſcribed, which he ſays are both familiar to infants, and for the moſt part very eaſily curable. We often ſee ſuch little ulcers are ſeated in the inner parts of the lips, cheeks, gums, and tongue; and they are often eaſily cured by only touching them with honey of roſes; more eſpecially if there be added one drop or two of the ſpirit of ſea-ſalt, or of vitriol, to each dram of the honey of roſes. Aëtius alſo recommends quinces, medlars, and other aſtringents, for the cure of aphthæ; which yet are not convenient for the cnre of thoſe aphthæ that ariſe in company with acute inflammatory diſeaſes, as will hereafter be made to appear. Moreover, we ſee Hippocrates calls by this title ſuch little ulcers of this kind as are ſeated in other parts of the body: for thus, ſays he, the wind-pipe of the lungs ſometimes is afflicted with aphthæ [w], and the private parts likewiſe [x]; and in that caſe he recommends a decoction of myrtle-berries in wine, or

 pomegranate-

[u] Lib. viii. cap. 42. p. 159. verſa. [w] De Morbis, lib. ii. cap. 18. Charter. Tom. VII. p. 570. [x] De Natura Muliebri, cap. 61. ibid. p. 714.

pomegranate-ſhells boiled in wine, and the like, which are able to bind up and ſtrengthen thoſe moiſt and relaxed parts, and prevent the putrefaction to be feared in them: but ſometimes he uſes emollient and oily medicines to relieve the troubleſome pain that ſometimes attends[y]. I have ſometimes ſeen theſe ulcuſcules in the genitals without any ſymptom that could give reaſon to ſuſpect any thing of the venereal diſeaſe; and they have then been at firſt troubleſome by their intolerable itching, afterwards extremely painful with a ſwelling of the labia; and I have found them exactly anſwerable to thoſe ulcuſcules, which bear the name of a *thruſh* in the mouth, and are by the ancients deſcribed and called by the title of *aphthæ*. This obſervation is the better confirmed, becauſe Hippocrates[z] gives us a caution, that they are to be found from the ſame cauſe both in the mouth and in the pudenda, *quum annus auſtrinus, humidus et mollis exſtitiſſet*; "whenever the ſeaſons of the year turned out rainy, "warm, and moiſt." But although theſe ulcuſcules are often quickly enough healed without any great apparatus from medicine, yet they ſometimes degenerate ſuddenly into ſuch a putrefaction, as ſpeedily devours the circumjacent parts, unleſs the incipient corruption be directly reſtrained by the moſt efficacious remedies. In the year twenty-eight of the preſent century, I obſerved this malady in Holland ſpread itſelf epidemically; and if the common people neglected this thruſh, as they often did, it eroded the cheeks, lips, and gums, with an intolerable fetid ſmell, more eſpecially in young perſons; for in perſons full grown the diſtemper appeared more rarely, and did not ſo ſoon eat through the circumjacent parts. At the firſt there commonly appeared an hard and painful tubercle in either of the cheeks, ſeated about the part where the excretory duct of the parotid gland opens; this made a ſlight excoriation in the interior ſurface of the cheek, and after a few hours the excoriated part appeared

[y] Ibidem, cap. 85. p. 718. cap. 98. p. 721. Et de Mulier. Morbis lib. i. cap. 33. ibid. p. 749.

[z] Epidem. 3. Charter. Tom. IX. p. 259,—265.

peared covered with a ſort of white cruſt, from whence the leſs knowing practitioners often imagined the ſwelling had an inclination to ſuppurate: but when they applied emollients with that view, the malady ſuddenly ſpread itſelf, and occaſioned a great fetor of the mouth, in ſo much, that, if the putrefaction was not directly reſtrained by touching it with ſpirit of ſea-ſalt, the affected parts turned black, and melted in a moſt corrupt filth. Aretæus[a] has very perfectly deſcribed this malady, and its various ſpecies, as we formerly ſhewed upon another occaſion at §. 816. In like manner Aëtius[b] remarks, that they ſometimes turned into ſpreading ulcers, and then he applied remedies that had a conſiderable acrimony. From hence we may underſtand why Celſus[c] calls thoſe by the title of *(ſerpentia ulcera)* "ſpreading ulcers of the "mouth," which the Greeks have named (αφθας) *aphthæ:* who alſo in another place[d], treating upon the cure of theſe ulcers, applauds ſuch things as by a cauſtic or burning acrimony are able to form eſchars upon old ſores, whenever more lenient remedies were found of little ſervice: but for this purpoſe he uſes alum, white-vitriol, and the chalcitis, or native red-vitriol.

But it is not ſo very apparent whether the ancient phyſicians were acquainted with thoſe aphthæ which we are preſently to deſcribe, and which make their appearance in acute maladies. Hippocrates[e] indeed, when he deſcribes the diſeaſes of the ſeveral ages of mankind, pronounces, that the thruſh or aphthæ are familiar to new-born infants; and the truth of the aſſertion is daily experienced by us in the preſent age, as we ſhall ſhew hereafter at §. 982. Moreover, he tells us in another place[f], ſpeaking of a ſuckling woman who lay ill of an acute fever: *Huic ex reliquorum incendio lingua ſuccenſa eſt; ſub hoc tempus lingua etiam velut denſa grandine* (ωσπερ χαλαζωδει ωμχνω) *exaſperabatur:* "But in this woman was enkindled an ardent fever,

[a] De Cauſis et Signis Morbor. Acutor. lib. i. cap. 9. p. 7.
[b] Lib. VIII. cap. 42. p. 159. verſa. [c] Lib. ii. cap. 1. p. 46.
[d] Lib. vi. cap. 11. p. 386, 387. [e] Aphor. 24. ſect. 3. Charter. Tom. IX. p. 119. [f] Epidem. 3. textu 6. Charter. Tom. IX. p. 314.

" from the redundant humours; during the time of " which, the tongue was roughly and thick set with " tubercles like hail." For the term *chalaza* is by the ancients used to denote a kind of pellucid tubercles like hail-stones, filled with a ropy or viscid humour, and often met with in the eye-lids: but we know the aphthæ appear sometimes betwixt white and pellucid, somewhat like unto pearls, and then they nearly enough resemble the said grandines or hail-stone tubercles of the eye-lids, see §. 985; and therefore it seems probable, that the aphthæ attended in this patient. But the description of aphthæ given us in the Lexicon of Julius Pollux, well enough squares with the same distemper among us; for his words are, APHTHA *is a superficial eruption or abscess, and exulceration, that appears white in the tongue, internal parts of the mouth, uvula, or throat*[s]. Here we are to observe, that this description includes both kinds of aphthæ; namely, the grandinous ulcuscules of the internal parts of the mouth, remarked by the ancients; and likewise those aphthæ, upon which we at present treat, that cover the surface of the tongue and fauces with a white crust, well known to all who have seen the distemper. But the term *abscess* is used in this description with great propriety: for, as we formerly observed (§. 402.) this term was used to denote the endeavours of nature to throw off or depurate the blood from offensive humours, by depositing them upon certain parts of the body; which is a circumstance that altogether agrees with aphthæ arising in the course of a febrile distemper, as we shall hereafter shew more at large. From what has been said, then, it appears to me a reasonable conclusion, that the descriptive marks of these aphthæ are to be found in the works of the ancient physicians.

§. 979. THESE aphthæ are small, round, superficial ulcuscules, which are seated in the internal parts of the mouth.

We

[s] Aphtha, exulceratio, et abscessus superficietenus dealbans linguam, vel paristhmia, vel uvulam, vel guttur. *Lib.* iv. *cap.* 25. *sect.* 200. *p.* 470.

We come now to the deſcription of aphthæ; which appear here, in complaiſance to cuſtom, under the denomination of *ulcuſcules*, becauſe this denomination has uſually been given to the aphthæ of the ancients: But, properly ſpeaking, they are with us rather a ſort of eruptive puſtules, that ariſe above the ſurface of the internal parts of the mouth, from whence afterwards exfoliating or falling off, they leave the parts to which they adhered perfectly in their natural or ſound ſtate; whereas the aphthæ of the ancients were manifeſtly attended with true and hollow ulcerations, only of ſmall dimenſions. This is very well obſerved by Ketelaer, in his treatiſe on this ſubject [h], who, in his practice, among the moiſt regions of Zealand, has had frequent opportunities of obſerving theſe aphthæ that attend acute maladies; and although his treatiſe on the aphthæ be but ſmall, it is not the leſs uſeful.

§. 980. FROM a more ſtrict examination of theſe aphthæ, they appear a kind of ſore eruptions or ulcerations in the final emiſſaries or ducts that pour out the ſecreted mucus and ſaliva into the mouth, formed by blocking up the extreme part of the duct by a humour that is thick, viſcid, or unpaſſable, urged into it.

In our author's phyſiological lectures or inſtitutes [i], it was demonſtrated, that a great quantity of thin juices are diſcharged through the whole internal ſurface of the mouth, in order to be mixed with the aliments in maſtication; and at the ſame time that there are numberleſs mucus cryptæ, or cells, in the back of the tongue, tonſils, velum of the palate, pharynx, and gula, which excrete a thick mucus for the lubrication of theſe parts. If we look into the mouth of a healthy perſon, we behold all thoſe parts equally bedewed in all points with humidity: from whence it is juſtly concluded, that in every point there are like emiſſaries

[h] P. 13. [i] H. Boerhaave Inſtitut. Medic. ſect. 65.

which tranſmit the ſaid mucous liquid, which is alſo confirmed very fairly by anatomical injections. Now thoſe eruptive and ſore protuberances which we call *aphthæ*, ſeem to ariſe, when the ſaid mucous humour, being rendered thicker than ordinary, cannot be driven forward through the ultimate extremities of the ſaid emiſſary ducts; but becomes there arreſted, and blocks up the excretory openings into the mouth; while the force of the humour urging behind protrudes the ends of the veſſels above the ſurface, and thus produces the aphthæ. A diligent inſpection of the aphthæ at their firſt eruption, when they are here and there ſolitary, ſeems to confirm this opinion; for when they occupy theſe parts in confluent or thick cluſters, they are not eaſily diſtinguiſhed to be compoſed of ſingle ones. But this appears ſtill more evidently when the aphthous cruſt falls off, and is again renewed, as is frequently obſerved to happen: for then, by wiping or ſcraping the internal parts of the mouth, there appears ſmall white points, more eſpecially if they are viewed by a magnifying lens; and theſe ſuddenly increaſing, unite one to another, as they lie contiguous, and form within a few hours a like aphthous cruſt reſembling that which a little before ſeparated and fell off. And it is alſo thence apparent, that aphthæ cannot without an impropriety be termed exulcerations.

§. 981. APHTHAE are therefore ſeated in all parts of the mouth where thoſe outlets (§. 980.) appear; and conſequently they may reſide either in the lips, gums, internal cheeks, tongue, palate, fauces, tonſils, uvula, gula, ſtomach, and ſmall inteſtines, and are almoſt every where of the ſame kind.

They occupy all the parts enumerated in the text; and may therefore be eaſily diſtinguiſhed from thoſe ſordes which ſometimes incruſt the tongue in acute diſeaſes to a conſiderable thickneſs. For it was ſaid before, when we treated of an Ardent Fever (§. 739.), that

that, by the great heat of the diſtemper, all the parts are dried up; and then the extremities of the exhaling veſſels become dry, parched, juiceleſs, and in a manner dead or withered, and are then protruded or elongated by the impulſe of the humours urging behind them; and then the tongue appears fouled with a yellow cruſt, or covered with a filth that is of a brown or black colour. Now a ſimilar cauſe has been aſſigned as productive of the aphthæ. But it is to be obſerved, that in the tongue there are numerous mucous follicles, from whence, only by gently preſſing or ſcraping the ſurface of the tongue, a great quantity of mucus comes forth: moreover, in our author's phyſiological lectures [k] it is ſhewn, that the outer membrane of the tongue is extended into capſules, that are upright, and cover, include, or defend the nervous papillæ that are protuberant. Theſe capſules being dried up, and dead, or withered, join with the collected mucus, which is here thickened by febrile heat, and thus form a great part of the ſordes that are obſerved to foul the tongue in ſuch fevers; although the extremities of the leſſer exhaling veſſels, affected in like manner, alſo augment the ſaid foul cruſt upon the tongue. For this reaſon the tongue has ſuch a filthy cruſt only on its back or upper ſurface, and not at all below; and though the other parts of the mouth appear dry, yet they are not covered by any ſuch cruſt. But aphthæ, on the other hand, never cover the tongue only, without affecting likewiſe the other internal parts of the mouth, more or leſs; and ſometimes they are very thick-ſet in the fauces (ſee §. 984.), when yet no ſigns of them appear upon the tongue. But as all the parts of the internal mouth appear to the view, we ſee, when the tongue is depreſſed, the aphthæ deeply ſet within the fauces; but then this is not enough to aſſure us the like aphthæ are alſo diſperſed through the ſtomach and inteſtines, after the ſame manner: But when the aphthæ are withered, and begin to fall or be caſt off, we then ſee entire cakes or incruſtations of them diſcharged by theſe patients in ſpittings; and at

[k] H. Boerhaave Inſtitut. Med. ſect. 435.

at the ſame time we obſerve, that perfectly the ſame ſort of incruſtations are alſo diſcharged in the ſtools, and in ſuch quantities as can by no means be ſuppoſed to come from any that are ſwallowed from the fauces and gula. Ketelaer[l] aſſures us he has collected ſuch quantities of them in a few days, from the ſpittings and ſtools, as have filled ſeveral baſons. But this will appear the leſs wonderful if we conſider, that when ſome are fallen off, others of the ſame ſort ſprout up again in their place, and thus repeatedly for ſeveral times. From whence it ſeems we may juſtly conclude, that aphthæ may be alſo ſeated in the ſtomach and inteſtines, as well as in the other mentioned parts.

§. 982. THE aphthæ, or thruſh, are therefore the moſt familiar to the northern nations; to people who inhabit low or marſhy countries, during warm and rainy ſeaſons; and particularly to infants, and to old perſons.

It is certain this diſtemper very rarely, or never, appears in hot countries. Skilful and experienced phyſicians, who have led the courſe of their practice in ſuch warm climates, when they have come into our northern regions have been ſurpriſed at the appearance of this malady which they had never before ſeen. When I formerly practiſed in my own country (Holland), no diſtemper offered itſelf more frequently to my obſervation than that of aphthæ in acute maladies: but ſince my reſidence at Vienna, for above five years paſt, I have not ſo much as once met with the complaint. From hence it was the opinion of Ketelaer[m], that human bodies, being more rare and open in the warmer regions, became better diſpoſed for perſpiration, ſo as often to carry of the matter of this and other diſtempers by exhalation or ſweat, which in bodies leſs apt to ſweat, and in colder climates, does not ſo eaſily eſcape from the habit. And he affirms, that he has obſerved ſuch copious ſweats and urines have rendered the aphthæ more ſafe and mild; whereas every

[l] De Aphthis, p. 15. [m] Ibidem, p. 30, 31.

every thing that leſſened thoſe evacuations, has proved miſchievous. Perhaps it deſerves alſo to be remarked, that, in thoſe regions where the aphthæ do not appear, the white and red miliary eruptions are frequently to be obſerved in the outward ſkin of the body. It may be then queried, Whether a like humour is not here depoſited upon the outward ſkin, as that which in the caſe of aphthæ is diſperſed through the ſurface of the various parts of the firſt paſſages? Certain we are, that theſe miliary eruptions often attend in moſt kinds of acute diſtempers and continual fevers: and there is alſo a very peculiar and diſagreeable ſmell, commonly reſembling that of flat or vapid vinegar, ſpread through the apartment in which the patient lies; which ſort of ſmell I have alſo ſometimes obſerved in aphthous patients. The white miliary puſtules of the leaſt ſort appeared filled with a pellucid liquor, in part projecting above the ſurface of the cuticle; and after the ſaid liquid has become turbid or opaque, the contents of theſe puſtular eruptions dry up, ſcale off, and will often be renewed again, as at firſt, for ſeveral times. But many like circumſtances we alſo obſerve in the aphthæ, which are alſo preceded by anguiſh about the præcordia, weakneſs, ſlight and perpetual dozings, of unequal intervals; in the ſame manner as we often obſerve thoſe ſame ſymptoms before the miliary eruption, and the decline of them after the ſaid eruption. Sometimes the miliary eruptions diſappear very ſuddenly, with danger to the patient; and in like manner we obſerve the aphthæ ſometimes vaniſh within a few hours, upon which the fever returns or rages immediately with violence, and a troubleſome oppreſſion is perceived about the præcordia, from which there is no relief to be had until the aphthæ come out again. But I propoſe theſe particulars as yet only under the ſtate of a query, that thoſe who have frequent opportunities of ſeeing both the aphthæ and the miliary eruptions, may judge concerning the affinity of theſe two ſeparations of the morbid matter depoſited upon different parts of the body: For it muſt not be diſowned, that there are ſeveral

veral other ſymptoms that precede and accompany the miliary eruption, which yet are not to be obſerved in the aphthæ.

But the aphthæ occur moſt frequently where people are obliged to inhabit low and damp regions. From hence it is, that this malady ſo frequently occurs in Zealand, which is every way ſurrounded by water, and kept from an inundation by raiſed banks, in ſo much, that Ketelaer[n] calls it the endemic or popular diſtemper of the iſland; and this more eſpecially in autumn, when there has been a hot and moiſt ſeaſon before it.

Now although the aphthæ are to be obſerved in perſons of all ages and ſexes, yet they are the moſt familiar to new-born infants; and in them they are generally of a mild diſpoſition, without being preceded by any violent malady. It is even ſomewhat rare for a child in the firſt few weeks after its birth to eſcape free of this complaint: but being of ſo favourable a condition, their mothers ſeldom conſult a phyſician in their behalf, however ſolicitous they may be for their health; but by the uſe of a little ſyrup of violets made with honey, joined ſometimes with a little ſyrup of rhubarb, given to be licked by the child at convenient intervals, theſe aphthous incruſtations become ſoftened, and in a little time fall off. But in the continual fevers of old perſons, the aphthæ very frequently ariſe; and, from the weakneſs of the patient, they often prove very dangerous.

§. 983. BUT when the aphthæ are about to appear in the mouth, they are uſually preceded by a fever that is of the continual and putrid ſort, or an intermittent that is changed to the continual kind, uſhered in with a diarrhœa or dyſentery, continual and great ſickneſs at the ſtomach, with nauſea or reachings, vomitings, and a deſtroyed appetite; great anguiſh, or oppreſſion, that often returns, about the præcordia;

[n] Ibid. p. 32.

dia; great weakneſs; a great flux of ſome particular humour; with a ſtupidity or dulneſs, and ſleepineſs that is imperfect, interrupted, or continual; and laſtly, a perpetual complaint of an oppreſſion or weight, and pain, about the ſtomach.

We come now to conſider thoſe ſymptoms which uſually precede an eruption of the aphthæ, and at the ſame time make the ſigns of what danger may be feared from them.

It is certain, that, except in new-born infants, the aphthæ are ſeldom to be obſerved without a continual fever: and more eſpecially they are frequent in autumnal fevers, that are formed by a degeneration of intermittents into continuals; or elſe ſuch as, appearing at firſt with the face of a continual fever, do afterwards grow more moderate, and aſſume the appearances of an intermittent. I have but once had an opportunity of ſeeing the aphthæ in a woman of fifty, after ſome fits of a ſevere tertian; and that too was in the middle of July, while fevers as yet retained their vernal diſpoſition. Our celebrated Boerhaave, only twice ſaw thick aphthæ break forth without any malady preceding; but then theſe were only in the lips of adult perſons, and terminated happily. I had once an opportunity of viſiting a child of a year old, who had moſt thick aphthous incruſtations, of a brown colour, ſpread through the whole internal mouth, without any preceding diſtemper: but of theſe ſhe was likewiſe happily cured, without having any conjunct fever all the time that the aphthæ attended, and almoſt without any other uneaſineſs but a difficulty of ſwallowing; and although the naked ſurface of the mouth was painful in touching the aliments when the aphthous incruſtations fell off, yet that likewiſe vaniſhed within two days. Ketelaer [o], who has had the care of treating ſuch a number of aphthous patients, aſſures us, "That he attended a "great many who were afflicted with the aphthæ in "a ſtate perfectly free from all fever; and who af-

"firmed

[o] Ibid. p. 26.

" firmed to him they had never perceived any fever " before them, but were free from that and every " other troubleſome complaint." And he adds likewiſe, that in new-born infants he had not always obſerved a fever go before this eruption.

But aphthæ more eſpecially follow often after thoſe fevers that begin with a diarrhœa or dyſentery, as Sydenham [p] has obſerved to us; eſpecially when the patients have been treated by the hot regimen, or any evacuation of the offending matter unſeaſonably hindered by reſtringents, without having removed any of the offenſive contents from the bowels by purgatives. And he afterwards remarks [q], that at the ſame time when dyſentries were ſpread epidemically, a kind of fever aroſe which he termed *dyſenterical*, although it had no dyſentery; becauſe it was accompanied with all the other ſymptoms, and had ſometimes even ſlight gripings of the bowels: but he found, that this fever, when it was about to leave the patient, was more inclined to produce aphthæ than any other fever he had ever ſeen. And here it is to be alſo remarked, that the ſaid fever had very ſeldom and ſcanty ſweats; whereas the epidemical conſtitution of the fevers that went before, was to flow with profuſe ſweats. This obſervation of Sydenham's therefore ſeems to confirm the opinion we formerly propoſed, under the preceding aphoriſm; namely, that the aphthæ more eſpecially break out, when, from the peculiar diſpoſition of the malady, or the ſingular conſtitution of the patient's body, ſweats are either very ſparingly or very difficultly brought forth.

Continual and great ſickneſs, *&c.*] It was before ſaid at §. 642, that a nauſea or ſickneſs of the ſtomach often aroſe from ſome putrid, bilious, or glutinous filth: and that, when theſe ſymptoms ariſe in fevers, without any ſigns of inflammation in the ſtomach or its adjacent viſcera, phyſicians have juſt grounds to ſuſpect ſuch a foul matter, we before ſhewed at large. Theſe, lodged in the firſt paſſages, there further corrupted by the fever, and in part drank up by the abſorbing

[p] Sect. iv. cap. 3. p. 222. [q] Ibid. cap. 4. p. 236, 237.

ſorbing veins of the inteſtines, will infect the blood with ſuch a matter as can never be changed into the condition of our healthy humours, but muſt conſequently be expelled thence in order to reſtore health. But Ketelaer[r] has obſerved, that the aphthæ break out with more danger and miſchief, when the patient neglects ſeaſonably to call in the help of a phyſician in the beginning of his complaint, before the ſtrength of the body is exhauſted; for in ſuch late calls one cannot ſafely make thoſe evacuations which ought to have been adminiſtered in the beginning of the diſtemper.

Great anguiſh or oppreſſion that often returns about the præcordia.] At §. 587. where we treated upon a Criſis, and alſo at §. 619. we obſerved, that there are often wonderful diſturbances, that frequently excite new and very troubleſome ſymptoms, when the ſubdued and fluxile matter of the diſtemper is about to be expelled by critical evacuations from the body, or to be tranſlated or depoſited by a metaſtaſis upon ſome particular part; but more eſpecially that anxieties and reſtleſs agitations of the body uſually accompany ſuch critical commotions, was obſerved at §. 633, and confirmed by many paſſages from Hippocrates. Now that this depoſition of the matter of a diſtemper upon the interior parts of the mouth, and alimentary paſſages, from whence the aphthæ ariſe, is ſuch a metaſtaſis, we are taught by a number of obſervations. I have often ſeen the aphthæ break forth upon critical days, with conſiderable relief to the malady which they attended; and have obſerved them to be much leſs ſafe, when they have appeared upon ſome other day of the diſtemper. Ketelaer[s], who, together with the practice of phyſic, charged himſelf with the maſterſhip of an academy, imagined the ſigns of criſes preſenting in diſtempers to be ſo obſcure and confuſed, that the obſervation of them ſeemed to him for no purpoſe or uſe; and therefore he preſumes to affirm that perfect criſes, terminating diſtempers fully upon certain ſtated days of the diſtemper, very rarely happened in Zealand: and yet, from a diligent and almoſt daily atten-

[r] De Aphthis, p. 40. [s] Pag. 19.

tion to the aphthæ, he was obliged to confeſs, that imperfect criſes, ſlowly and gradually exterminating the malady, were very frequently to be obſerved; among which he ranks theſe aphthous eruptions. But in another place [t] he confeſſes, that the aphthæ which aroſe before the ſeventh day of the diſtemper, were much more troubleſome and fatal than thoſe which aroſe upon the ſeventh or ninth day; and that they appeared beſt of all in adult perſons of perfect ſtrength, after nature had grappled with the diſtemper, and given ſigns of concoction upon the ſeventh or ninth day, when they broke out with moderate ſymptoms, in no great abundance, eſpecially with a ceſſation or great abatement of the fever: but he condemns thoſe aphthæ which appear before the matter of the diſtemper is concocted. From hence, then, the doctrine of the ancients, concerning criſes or critical days, appears to be very fairly confirmed, even from the obſervations of thoſe who were diffident of this matter, provided one attends to all the appearances that follow through the whole courſe of the diſtemper. Since therefore the aphthæ are truly critical in diſtempers, it is no wonder if critical commotions, ſuch as anguiſh about the præcordia, *&c.* go before them.

But this anxiety goes off and returns repeatedly; becauſe when the aphthæ are come to a ſtate of falling-off, they are often ſucceeded by other new ones, ſprouting from the ſame matter of the diſeaſe, not yet wholly expelled from the habit, but depoſited upon the aphthous parts. For ſometimes the matter of the diſeaſe is ſo copious, or the powers of the body are ſo much weakened by the malady, that this critical ſeparation by aphthæ cannot be made inſtantly by one effort. But Ketelaer [u] juſtly aſſerts thoſe aphthæ to be of a dangerous ſort, "that by breaking out and "diſappearing again repeatedly fatigue or tire-out the "ſalutary endeavours of nature by their inſults." But what here deſerves to be particularly regarded, is, that the warm, and wet or rainy ſeaſons, in which the aphthæ were ſaid the moſt frequently to occur (§. 982.) are

[t] Ibid. p. 25, 39.

[u] Ibid. p. 39.

are alſo by Hippocrates [w] obſerved to be often attended with diſeaſes, *whoſe criſes are either wholly wanting, or of a very difficult bad ſort,* αχρισιαι πολλαι, τα δε δυσκριτα.

We formerly obſerved (§. 591.) when we gave the general hiſtory of Fevers, that they terminate in a three-fold manner; namely, either in health, death, or another diſtemper. But it was there alſo ſaid, that (§. 592.) aphthous incruſtations produced in the firſt paſſages by fevers, prove frequently the cauſe of death, in as much as they very thickly plaſter up the ſurface of the ſtomach and ſmall inteſtines, ſo as to intercept the ſmall veſſels, by which new ſupplies of the nouriſhing liquids ought to be taken up for repairing thoſe that are waſted. But this properly belongs to that change of a fever, by which it terminates in another diſtemper, by depoſiting the critical matter in certain veſſels that are obſtructed or dilated (§. 593.), as may very plainly appear from what has been hitherto advanced.

Great weakneſs.] Since aphthæ break forth when the diſtemper is ſomewhat adult or far advanced, and ſince they are often obſerved to be preceded by diarrhœas, dyſenteries, or other copious evacuations; it will not be ſtrange if the patients are often weakened before the eruption. But our text here means, that "puſillanimity and ſinking of the ſpirits," (*refugiente animo virium præcipitatio* [x]), which appears more ſudden and exceſſive than any violence or duration of the diſtemper, or the copiouſneſs of the diſcharges, can well account for. Such a ſudden weakneſs is obſerved to go more eſpecially before thoſe aphthæ which are dangerous; in which the reſolved and fluxile matter of the diſtemper ſeems to have ſo malignant a nature as to infract all the powers, by vitiating the blood and ſpirits with which it flows through the veſſels, before it can be depoſited upon the ſurface of the alimentary paſſages: for when that depoſition is once made, the powers uſually grow ſtronger. Now

[w] Epidemicor. 3. Charter. Tom. IX. p. 263. [x] Ketelaer de Aphthis, p. 37.

the ſame ſort of extreme debility is ſometimes obſerved to attend in the petechial and miliary eruptions, no leſs than in the worſt ſort of the ſmall-pox, before the virulent matter of thoſe diſtempers is thrown out upon the ſurface of the body. Moreover, at §. 661, where we treated of weakneſs as a ſymptom in fevers, it was remarked, that ſometimes a matter, lodged about the præcordia in theſe diſeaſes, ſtifled all the powers with a poiſonous force in a moment, although no other antecedent cauſes appeared to which one could poſſibly aſcribe ſuch a great and ſudden ſinking of the ſtrength and ſpirits; as was there proved more at large. But in the aphoriſm next following it will be ſhewn, that the worſt kind of the aphthæ, that are uſually fatal, aſcend gradually from the œſophagus or gula, while as yet there is no appearance of them to be ſeen in the interior parts of the mouth: and therefore it is here highly probable, that they break out firſt about the cardia or mouth of the ſtomach, before they appear in the fauces and mouth; and therefore this may be one reaſon for the extreme weakneſs that goes before the aphthæ appear conſpicuous in the mouth or fauces, when they have long before infeſted the lower parts of the alimentary way.

A great flux or evacuation of ſome particular humours,] More eſpecially of thoſe in which the moſt ſubtile juices are exhauſted from the body. For thus, in the laſt ſtage of a pulmonary conſumption, I have often obſerved the aphthæ or thruſh to appear, after nocturnal ſweats had been for a long time endured.

Dulneſs, and ſleepineſs, *&c.*] Ketelaer[y] obſerves, that theſe ſymptoms go before the approaching aphthæ, and that it is very rarely that this ſign fails; ſo that the nurſes or attenders of the ſick, in places where the thruſh is familiar, immediately preſage its appearance, when they obſerve the patient to lie thus dull and ſleepy. But ſince the matter which forms the aphthæ is conveyed, together with the lymph, through very minute veſſels; and at the ſame time induces ſuch a thickneſs of the lymph, that it cannot

y Pag. 28.

cannot pass freely through the ultimate ends of the vessels, that are thereby obstructed (see §. 980.): it will be no wonder if the said offending matter, as yet lodged in the whole circulation (and not yet deposited, by metastasis, upon the surface of the alimentary passages) shall introduce such an imperviousness of the very thin lymph, as to cause this morbid lentor. But that from thence a febrile coma may arise, was shewed before at §. 704: and hereafter such a sluggish or ropy disposition of the humours is reckoned among the causes of an apoplexy, at §. 1010, N° II. 3.

A perpetual complaint of a weight and pain about the stomach.] Which more especially attend where the aphthæ infest the stomach and gula before they appear in the mouth and fauces. Such patients often complain, that in this case they perceive a sensation, as if a hard heavy body stuck in the gula, resisting the drink that is swallowed in its descent through this tube to the stomach. I have often observed likewise an hickup to precede sometimes before the aphthæ were about to appear in the mouth; which seems to have been occasioned by the aphthous crust, first forming itself about the upper orifice of the stomach, where it is a cause of irritation by its bulk: for in that case the same irritation is continually given, as is felt by healthy persons, who suddenly swallow too large mouthfuls, or lumps of aliment, which slide with difficulty through the end of the œsophagus into the stomach, and usually occasion an hickup to follow.

§. 984. AT the beginning of this eruption, it is usual for the pustules to appear sometimes solitary, or dispersed in different parts of the mouth, more especially at first in the tongue, corners of the lips, the fauces, *&c.* without any certain or constant priority of their station; and such are almost always of a good disposition: but sometimes they appear first ascending in the bottom of the fauces, like a thick, white

cruſt, ſpringing ſlowly up from the gula, to which they very firmly adhere with a ſhining aſpect, like freſh lard, or bacon-fat; and theſe are next to the very worſt aphthæ, and for the moſt part certainly fatal: but ſometimes the whole cavity of the mouth on every ſide ſhall be covered with ſuch hard, thick, compact, and tough incruſtations, covering every point, even to the corners of the lips; and from theſe the patient rarely recovers.

We come now to the enumeration of thoſe ſigns from which the greater or leſs danger of the appearing thruſh is known, in order to form thence a prognoſis of the conſequent events. But here great care is neceſſary; "ſince the aphthæ deceive phyſicians in "their approach; and, when they are preſent, cannot "be at all more truſted to, if we deſire to draw thence "any preſage as to life or death[z]."

The prognoſis then is to be taken from the part where the aphthæ firſt break out, and from the various thickneſs of the aphthous incruſtations.

At the beginning it is uſual, *&c.*] How uſeful it is for the phyſician, in the cure of diſeaſes, to inſpect into the mouth, tongue, and fauces, was formerly declared at §. 609; but this becomes in a more eſpecial manner neceſſary when the ſigns of the former aphoriſm (983.) joined with the epidemical conſtitution, afford reaſon to expect aphthæ: and if then they appear but a few, ſcattered here and there, it is a good ſign that ſeldom deceives us. However, it ſometimes happens, although not very often, that the aphthæ break out very ſcantily upon the various parts of the mouth, but are numerous and denſe enough in the more interior parts: but then, here, the violence of the diſtemper antecedent, the conſtant ſickneſs and hickuping, with the pain and weight about the ſtomach, ſufficiently point out to the attentive phyſician, that little credit is to be given to the ſcattered or ſlightly appearing aphthæ. Moreover, in this caſe, the

[z] Ketelaer de Aphthis, p. 38.

the vital powers are ſometimes ſo far depreſſed, that they become inſufficient to throw out the matter of the diſtemper upon theſe parts; from whence again the aphthæ may appear but few, and yet preſage miſchief from ſuch a cauſe: but this laſt caſe more eſpecially obtains in perſons of an advanced age; and then the quick and weak pulſe, without any relief to the urgent ſymptoms (going before the aphthæ) upon the eruption, inſtruct the phyſician that theſe are only fruitleſs efforts of nature ſinking under the diſeaſe, and therefore afford a fatal prognoſis.

Sometimes they appear firſt aſcending in the fauces, *&c.*] As in this caſe they ariſe gradually from the interior parts to the mouth, we have thence a ſign that the alimentary way is filled within the body by theſe aphthæ; and therefore that all thoſe miſchiefs are to be feared which will be enumerated at §. 988. For unleſs a ſpeedy exfoliation of the ſaid denſe incruſtations of the aphthæ can be procured, and unleſs the powers ſhall continue ſtrong enough to throw out ſo great a quantity of the offending matter, there are no hopes.

But ſometimes the whole mouth is denſely covered, *&c.*] Such total, hard, and thick incruſtations, likewiſe afford the worſt preſage; for here new aphthæ ſprout up, and are cemented to the former incruſtation that is held from falling off. And as none of the neceſſary juices can be thus detached from the ſubjacent veſſels, through ſo denſe a cruſt, to the ſurface of the mouth, the whole is thus again rendered more dry, hard, and tough, and ſo makes a much ſtronger reſiſtance to a ſalutary ſeparation. Hence the patients become unable to ſwallow any thing; and even their tongue, lips, and cheeks, being in a manner thus rendered ſtiff or rigid, become unable to contain any liquids that are put into the mouth; and at length, the fauces being in like manner filled, they miſerably expire by ſuffocation.

§. 985. THE colour of theſe incruſtations of aphthæ is various: for either they are

are of a pellucid or ſhining white, like unto pearls; or of a ſimple opaque white, from the great thickneſs of the cruſt; or elſe flame-coloured, yellow, livid, or even black: the malignity of which colours increaſes in the order they are here reckoned up, ſo that the firſt is the beſt, and the laſt the worſt.

The ſubject of the preſent aphoriſm is the diverſity of the colours, from which one may deduce a preſage or prognoſis of the malady.

When the aphthæ are found ſcattered thinly here and there in the mouth, they always appear with a pellucid whiteneſs; but when a number of their incruſtations are grown one to the other in a thick covering upon the interior ſurface of the mouth, they then form a white cruſt that is opaque; which, if it does not quickly exfoliate, augments in thickneſs, and in the mean time changes colour according as the outer ſurface of it gradually dries and alters, ſo as to paſs ſucceſſively through the various degrees of colour deſcribed in our text. Sometimes it happens, that the ſprouting aphthæ appear immediately of a grey or aſhen colour, and then I have almoſt conſtantly obſerved them to be fatal; which is alſo a circumſtance affirmed by Ketelaer [a]. As for the other diverſities of colour, they ſeem to appear chiefly when the aphthous incruſtations cohere a long time to the ſurface before they fall off; which is always to be accounted a bad ſign, as the aphoriſm next following will declare: but whether the thruſh ever breaks forth of a black colour, ſeems indeed to be doubtful. Ketelaer [b] ſays he never ſaw ſuch; nor do I remember to have ever ſeen them thus at their firſt eruption: but when the incruſtations have for a long time continued cohering to the mouth, I have then perceived them turn black before death, and yield a very diſagreeable ſpectacle to the eye.

§. 986. WHEN they have continued ſome time, they uſually relax and looſen themſelves,

[a] Ibidem p. 14. [b] Ibidem.

themſelves inwardly or beneath, and then exfoliate or fall off in fragments; and thus by degrees all the parts firſt affected are orderly cleared of the incruſtations. But in point of time, they fall off ſometimes ſooner, ſometimes later: ſome of them ſprout up again immediately, others more ſlowly, and others not at all: ſometimes the ſucceeding ones grow as thick as the former, or even to a greater thickneſs; from whence again the time and difference of the danger readily appears.

If the vital powers remain as yet ſufficiently ſtrong, the liquids urging the extremities of the obſtructed veſſels will ſeparate or throw off the aphthous cruſt, more eſpecially if the mouth be continually fomented with emollient and gently deterging liquors, as will hereafter be directed in the cure. Nor can any certain ſpace be fixed for the making of this ſeparation; for ſometimes I have known the aphthous incruſtations thrown off within twelve hours, and ſometimes they have moſt firmly cohered for many days together: nor do they fall off all of them at once; but one while from this part of the mouth, and another while from that part; ſo that I could never obſerve any conſtant rule of their exfoliating ſooner from one region of the mouth than another. However, it ſeems highly credible, that being perpetually fomented by the natural humours, and by the ſwallowed liquors, in the ſtomach and inteſtines, they are there the ſooner ſeparated. If now the ſeats of the deciduous aphthæ appear clean, red, and moiſt, they then either ſprout no more, or at moſt very ſcantily. But if their ſeat appears dry, it is then juſtly accounted a bad ſign, ſince they often return as thick, or even thicker than before; provided the vital powers continue ſtrong enough to drive out the matter of the diſtemper: but if the patient is now become too much weakened for that expulſion, great anguiſh uſually enſues; and, unleſs the aphthæ ſprout up afreſh, even death itſelf is ſpeedily the conſequence. Sometimes the ſeats of the fallen aphthæ will appear not altogether

altogether dry, but as if covered by a very thin or white ſpider-web, from which in a few hours they grow up as thick as before; and then we know there is a great quantity of the matter of the diſtemper to be this way expelled, and that the vital powers as yet continue able to carry on the ſaid expulſion. But this ſeparation of the aphthæ, and new reproduction of them, is frequently repeated ſeveral times before all the matter of the diſtemper will be entirely expelled. Ketelaer [c] has ſeen this renewal of the thruſh for ſix, ſeven, or more times, which agrees alſo with my own obſervations; and ſometimes there will be an interval of ſeveral days betwixt the falling and the repullulating incruſtations: but then the parts from whence the aphthæ fell off do not appear perfectly moiſt, and there are anxieties about the præcordia, together with a ſleepineſs, left ſtill behind; all which ſufficiently admoniſh the phyſician, that the malady is not yet entirely ſubdued.

But theſe deciduous aphthæ afford ſtill another variety as to their prognoſis. For thoſe which fall off the ſooneſt, are always of the beſt condition, although they may ſoon after repullulate a-new, and then exfoliate again. For ſuch denote indeed the matter of the diſtemper to be copious, but as yet ſufficiently fluxile, while the paſſages or ducts alſo remain duly open to it, and the excretive powers hold their due ſtrength. But when they fall off more ſlowly, we conclude the matter of the diſtemper is more tough, the vital powers leſs able, and the ſubjacent veſſels leſs pervious; from all which greater danger is denoted. But where there is a more conſiderable interval of time interpoſed betwixt the falling and the ſprouting cruſt; we then know, that the matter of the diſtemper is only in part ſubdued, but more of it ſtill remains to be advanced to a ſtate of maturity, before it can be depoſited upon theſe parts; and therefore we foreſee the malady will be tedious, or ſubject to many returns, with which the patient muſt grapple a long time before he can eſcape. However, the falling aphthæ have this advantage over the

[c] Ibidem p. 214.

the reſt, that they allow the patients more freely to ſwallow, and to take light or liquid nouriſhments, whereby their ſtrength may be in the intervals recruited, and better enabled to ſuſtain the repeated attacks of the lingering malady. But where they ſprout up again equally or more thick than at firſt, there is juſt reaſon to fear the powers are not ſtrong enough to be able to make ſuch a copious excretion and ſeparation of the matter of the diſtemper as may ſuffice to reſtore health: and then, as the incruſtations dry up, without falling off, the newly ſprouting aphthæ join to them, and produce all the fatal miſchiefs of which we treated at §. 984.

But if the internal mouth appears clean and moiſt after the falling of the thruſh, without any anguiſh about the precordia, and without leaving any dulneſs or ſleepineſs; we are then well ſatisfied of the patient's recovery to health, provided the fever ceaſeth, or gradually abates every day.

§. 987. HERE then the ſeat of the diſtemper (§. 981.), the nature of the eruption (§. 979, 980.), and the cauſes (§. 980, and 983.) are to be conſidered, or compared together with the ſymptoms of the preſent malady (§. 984, to 987.) in order to aſcertain the diſpoſition or tendency of it; and from the ſame ſprings one may eaſily derive its conſequent effects.

The ſeat or reſidence of the thruſh we have already aſſigned; namely, the whole interior extent of the mouth, fauces, gula, ſtomach, and inteſtines: and it appeared alſo from what was advanced, that the final emiſſaries of the veſſels, which water theſe parts, are obſtructed with a thick unpaſſable humour: and the cauſes too, with the antecedent ſymptoms, have been alſo enumerated, together with the manner of diſtinguiſhing betwixt the leſs and the more dangerous kinds of the thruſh: from the knowledge or compariſon of which one may grow well acquainted with the effects of the preſent malady.

§. 988.

§. 988. NOW when once the whole ſurface of the deſcribed parts (§. 981.) is covered over with ſuch an aphthous cruſt, the ſenſibility of their nerves is intercepted by it, whereby all taſting is aboliſhed; and the exit of the thin juices through their reſpective emiſſaries being cut off, the ſaid parts are therefore dry, the ſubjacent veſſels are dilated, and there follows a putrefaction of the ſtagnant liquids beneath, with an inflammation of the parts themſelves: thence the tubular hollowneſs of the abſorbing veſſels being cloſed up, all entrance is denied to the freſh chyle, drinks, and medicines; in conſequence of which follow all the miſchiefs that can ariſe from a want of recruiting the bodily nouriſhment, and in proceſs of time even death itſelf. But when the incruſtations fall off, there will be a greater flow of the juices through the dilated and now opened veſſels; from whence comes a ſalivation, or a diarrhœa, which are good ſigns if the aphthous incruſtations are not again renewed, as they are bad ones when the aphthæ ſprout up again: the exfoliation of the aphthous cruſt, with the painfulneſs of the nakedly expoſed parts, often occaſion them to diſtil or run down even with freſh vivid blood, from whence the ſpitting becomes bloody, and the flux or purging has the ſame appearance. But if all theſe circumſtances be applied to the ſtomach and bowels, with their emiſſaries from the liver and pancreas, we may from thence learn the infinite number of miſchiefs that may ariſe from this one malady; which therefore renders it needleſs for us to purſue its prognoſis any further.

The miſchiefs ariſing from the thruſh are of two kinds:

kinds: either such as come from the plastering over the surface of the first passages; or from the great painfulness and irritation upon the raw or naked surface that remains after the incrustations are thrown off, for want of whose resistance the dilated and open vessels send forth too copious a flux of the juices which they contain.

From whence all tasting is abolished, *&c.*] It is demonstrated in physiology[d], that tasting is produced when the matter to be tasted is attenuated, and in a manner somewhat dissolved, by the saliva in the warm mouth, so that, being applied by the motion of the tongue and mouth, it may penetrate the pores of the capsules that cover the nervous papillæ in the surface of the tongue. But when the whole internal surface of the mouth and tongue are covered over with such an aphthous incrustation, the sapid particles can by no means penetrate to the said nervous papillæ of the tongue. And as all the salival emissaries are at the same time shut up, there must of necessity be always a dryness in these parts; and from this dryness, with encumbring incrustations, the cheeks, lips, and tongue, acquire such a stiffness or inactivity, that the unhappy patient can hardly use them to retain any liquid in his mouth, but it will directly run out again. From all which it is evident, the principal conditions required to the perception of taste are here wholly abolished.

A dilatation of the subjacent vessels, *&c.*] It was formerly demonstrated (at §. 120. and §. 382, nº 1.) that obstructed vessels are under a necessity of being enlarged or dilated; because in the obstructed vessels the greatest resistance, and the greatest fulness, take place, while nothing can be transmitted through their extremities. Therefore, when all the parts mentioned are over-spread by the thrush to a considerable thickness, very troublesome swellings of the said parts ensue from the over-dilated subjacent vessels, and which are even in danger of causing suffocation when they are seated about the fauces and larynx. In the gula they often block up the cavity of the tube so far, that

[d] H. Boerhaave Institut. Med. sect. 489.

even nothing, or but a very little of any liquid, can gain admittance thereby into the ſtomach. I have even often ſeen theſe unhappy patients, after having been ſeveral times moleſted with ſuch a difficulty of ſwallowing, refuſe all kinds of drinks to avoid the ſufferance of the like anguiſh again. If now we conſider at the ſame time, that theſe obſtructed veſſels are turgid with ſuch a matter of the diſeaſe as requires to be exterminated from the body, we may eaſily perceive that a ſudden putrefaction is to be feared in the humours that are ſtagnant under the incruſtations, and this more eſpecially when a violent fever urges at the ſame time: for then even inflammation ſpreads into the parts themſelves obſtructed, from whence the ſwelling ſtill more increaſes; and, laſtly, the putrefaction will be alſo haſtened by the increaſed heat that always attends inflammation.

Shuts up the hollow cavity of the abſorbing veſſels, *&c.*] It is very deſervedly a principal care with phyſicians, to ſupport the life and ſtrength of the patient by ſuitable foods and drinks that are eaſy of digeſtion: and although ſometimes, in the greateſt violence of the moſt acute maladies, we can allow only a moiſt, thin, and ſpare diet that is but little nouriſhing, yet always ſomething is allowed that is alimentary, while a plentiful uſe of thin drinks is alſo recommended, that too great a dryneſs in the body may be avoided. But all theſe will be ſwallowed to no purpoſe in the preſent malady, if the ſtomach and bowels are thickly covered with aphthous incruſtations, by which the mouths of all the abſorbing veſſels are ſo cloſed up as to admit none of the juices to paſs through them into the blood: but, inſtead of refreſhments, the moſt intolerable oppreſſions will enſue from the ſwallowed aliments, however fluid, if they can gain no free paſſage through the ſwelled bowels; or even if they ſhould gain ſuch a paſſage, they are thrown away unaltered by ſtools. From hence again the thickneſs of the humours becomes neceſſarily increaſed, no leſs than their acrimony; from all which the vital powers languiſh: and that from ſuch cauſes aphthæ may terminate in death,

death, was formerly declared in the Hiſtory of Fevers, at §. 592.

A greater flux of humours by the dilated veſſels, when the incruſtations fall off, *&c.*] There is ſtill another danger that attends ſuch patients, even at the time when they are rejoiced to find the aphthous incruſtations are falling off: for there ſoon after follows a copious ſalivation, and diſcharge of a humour that is often extremely viſcid; becauſe the veſſels, over-dilated, now ſeparate a fluid, not only thicker in conſiſtence, but alſo more abundant in quantity. If then we conſider, that this efflux of humours, following upon the deciduous thruſh, may take place throughout the whole tract of the firſt paſſages; the reaſon will be thence evident, why a diarrhœa enſues, and why death often follows from the ſudden and profuſe diſcharge of thoſe liquids, in weak patients, who have long languiſhed under the troubleſome malady, at a time when both patient and phyſicians have formed better expectations. If ſuch an evacuation be moderate, and the patient's ſtrength be as yet tolerably firm, this flux affords one of the beſt ſigns; becauſe it carries off all the remains of the matter of the diſtemper, now eaſily expelled through the open and dilated veſſels, ſo as to prevent any future returns of the aphthæ. But if the aphthæ ſprout up again, we then know that the ſaid matter ſtill dwells in the body, and that in ſuch a viſcid or tough condition as to be unable even to flow through the open ends of the relaxed and dilated veſſels; and therefore we ſeldom find a patient able to grapple afreſh with theſe new miſchiefs, when his powers are almoſt exhauſted by thoſe which have foregone.

Painfulneſs of the naked and inflamed parts, uncovered by the falling aphthæ, *&c.*] That the living parts are inflamed under the ſaid aphthous incruſtations, was a little before declared: but when the ſaid aphthous incruſtations fall off, the ſubjacent parts are extremely red and painful, ſo that they cannot bear the leaſt touching; and then the miſerable patients can hardly ſwallow any thing for the extreme painful-

neſs of the excoriated parts, which often diſtil a vivid or red blood. But in the mean time, the moſt emollient drinks and medicines are to be uſed often, and in ſmall quantities at a time, to prevent the raw and excoriated ſides of the gula from growing one to the other, which would form a malady afterwards incurable. In this manner I ſaw, from an excoriation in the upper mouth of the ſtomach, a moſt troubleſome hickuping and cardialgic pain ariſing from all foods and drinks that were ſwallowed, and which held for ſeven weeks, in a man of ſixty years old, after the aphthæ were fallen. And it was very difficult to relieve this complaint, becauſe the convulſed gula draws the ſtomach and diaphragm upwards, or at leaſt that part of the diaphragm through which the gula paſſes, after which the diaphragm being ſuddenly contracted falls downward again, from whence the painful part becomes again irritated, and its conſolidation hindered.

But from comparing or applying all theſe particulars to the ſtomach, *&c.*] In the internal parts of the mouth we are able to ſee what changes follow after the fallen thruſh. But certain we are, that in the more interior parts of the alimentary way the thruſh alſo ariſes, and afterwards falls off again: and if now we conſider, that the opening of the common duct of the bile and pancreatic juice, into the inteſtine duodenum, may be ſo ſtopped up by a thick aphthous cruſt, as to tranſmit neither of thoſe important fluids; we may thence eaſily comprehend what great anxieties muſt follow about the præcordia. But when the ſaid impeding cruſt is once ſeparated, and a free way opened for the diſcharge of the now accumulated bile, rendered more acrid by ſtagnating, we need not wonder if the moſt ſevere gripes ariſe in the bowels, which are in a manner almoſt excoriated, ſo as to produce moſt dangerous diarhœas and dyſenteries. Hence it is, that many phyſicians have ſo much condemned the uſe of purgatives [e] in the aphthæ, becauſe they have obſerved them ſometimes fatal within a few hours, by cauſing

[e] Ketelaer de Aphthis, p. 45, 46.

cauſing an over-purging or hypercatharſis, which ſeems to have been the effect not only of the purgatives, but alſo of the ſudden torrent of collected bile, and pancreatic juice, ruſhing ſuddenly forth into the bowels, and irritating their raw or naked ſurface. Moreover, as a ſalivation often holds for ſeveral days after the thruſh is fallen from the mouth, before the dilated veſſels can contract to their primitive ſmallneſs; ſo, upon the ſame account, the juices which naturally diſtill into the ſtomach and inteſtines, frequently continue to flow in ſuch great abundance as entirely to exhauſt the body by the purgings.

§. 989. BUT if theſe ulcerous incruſtations be very coheſive, thick, broad, and tough, or compact; then often the ſubjacent fleſh, inflamed, has its circulation thus ſuppreſſed or ſtifled, ſo as to change into a ſuppuration, a gangrene, or a dreadful ulcer; which laſt will ſometimes eat through the palate-bone, even to its upper covering: but what miſchiefs may ſpring from the ſame ſource in the ſtomach and inteſtines, are ſelf-apparent.

When we treated formerly upon a Gangrene (at §. 423.) it was declared, that the matter of a fever is ſometimes ſettled or depoſited upon particular parts of the body, where it exerts ſo great a malignity as wholly to deſtroy the vitality of the part where it is ſeated; and that even in an exceeding little time, as we there proved more at large. Now the aphthæ ariſe from the matter of a fever, thrown towards the ſurface of the alimentary paſſages; and that it there ſometimes proves very miſchievous or malignant in the worſt ſort of thruſh, plainly appears from what has been already ſaid. Even the aphthæ that are more ſlight, and of a milder diſpoſition, may be well eſteemed a kind of ſuperficial gangrenes: ſince here the ends of the veſſels, ſtuffed with the viſcid humour, form together a dead cruſt, that requires to be ſeparated

and caſt off from the ſubjacent living parts. The matter therefore of the fever being depoſited or ſettled on theſe parts, and the extreme openings of the ſaid veſſels being ſtopped up, deſtroys their vitality, and thereby truly imparts to the aphthæ the nature of a gangrene. But it was formerly remarked at §. 442, that if gangrenous parts dry up ſo as to form an hard eſchar or ſcab, the ſubjacent living veſſels are in that caſe compreſſed by the ſaid eſchar; and being ſtruck by the vital circulation increaſed with a fever againſt its reſiſting ſurface, a new inflammation ariſes beneath the dead eſchar, and ſoon turns likewiſe into a gangrene; and in this manner the thickneſs of the incumbent cruſt of the gangrene is continually increaſed, until the parts are all dead even down to the bones.

The like danger is to be feared, alſo, when the aphthous incruſtations do not ſpeedily fall off: for then a new cruſt ſprouts up, and coheres with the former, as was ſaid at §. 984; and thus, cauſing a greater compreſſure on the ſubjacent living parts, it ſpreads the malady. If ſuch thick and firmly cohering incruſtations remove not from the arched palate or roof of the mouth, the membranes which clothe this part are deſtroyed; ſo that when the gangrenous incruſtations afterwards ſeparate, the palate-bone appears naked, turns foul or carious, and occaſions the moſt troubleſome miſchiefs. If now we conſider, that the ſame ſort of miſchiefs, which here appear to the naked eye within the mouth, may likewiſe take place in the ſtomach and inteſtines, we may be thence able to underſtand how many and how great miſchiefs may ariſe from the aphthæ; more eſpecially if we herewith compare what was formerly ſaid upon an inflammation of the ſtomach and inteſtines.

§. 990. THE beſt method of treating this malady for a cure, is, 1. To raiſe the ſtrength or impulſe of the vital circulation within the parts that are diſtreſſed by the aphthæ, and to temperate

temperate the ſharpneſs of the vital humours, that by importing a due quantity of fluid moiſture beneath the ulcerous incruſtations, they may relax, ſeparate, and fall off: and this intention is anſwered by plenty of warm, diluent drinks, that are reſolving and abſterſive. And becauſe in the worſt ſorts of this malady the lacteals, being incruſted or plaſtered over, deny the ready entrance to the chyle or drinks, therefore outward fomentations, vapours, and bathings with the like liquors, will be of infinite ſervice; but the beſt aliment will be afforded by a decoction of bread and water, with which are mixed ſome wine and honey at the time of taking. 2. To diſpoſe the incruſtations to an eaſy and ſpeedy ſeparation: and this is procured by foments, gargles, and clyſters, which ought to conſiſt of warm, relaxing, emollient, and deterſive liquors, which reſiſt putrefaction, and adhere a long time to the parts to be moiſtened. 3. So ſoon as a ſeparation of the incruſtations is once procured, immediately ſuch medicines, in the like forms, are to be uſed, as are anodyne, healing, and coroborating. 4. And again, when the fever is once quelled, the urine charged with a ſediment, and the pulſe become ſomewhat more free and eaſy, a drink that is merely corroborant will then be of ſervice. 5. Laſtly, in the end of the diſtemper, a corroborant purgative may be adminiſtered to clear the bowels.

The whole hiſtory of the thruſh, that has been hitherto delivered, informs us, that a morbific matter is here extricated from the reſt of the humours, and depoſited on the alimentary ways; and therefore, in the cure, it is a neceſſary precaution, that nothing be taken that may hinder or oppoſe this effort of nature; but, on the contrary, to make uſe of every thing

thing that can promote the expulsion of the morbid matter. And this is the more carefully to be remarked, because many of the less skilful have confounded the ulcerative thrush of the ancients (for the cure of which, restringents were commended), with the present aphthæ that follow acute distempers; and in consequence of this, they have attempted the cure by coolers and astringents, to the great damage of the patient. The perniciousness of this error in the practice of physic (as Ketelaer[f] observes) appears hence, that "just as much oppression and anguish is thrown "upon the heart and vital organs, as is proportion-"able to the space and relaxation imparted to the "mouth and fauces by such coolers." For so soon as ever the eruption of the thrush is checked, the fever directly encreases, the anguish becomes extreme, and many other mischievous symptoms ensue, that are not to be relieved until the thrush shall again break forth. The productive matter, therefore, of the aphthæ requires to be rendered fluxile or moveable; and the vessels must be disposed to give it an easy passage outward. The former of these indications may be obtained by moderating the fever, in such a manner as to be neither excessive, nor too sluggish. But we have already, in our history of Fevers (§. 609, 610, and 611.) treated upon the signs for distinguishing these bounds; and upon the manner of reducing the too great violence, or of exciting the over sluggishness, of the fever. To the same purpose will also conduce a very plentiful use of diluent, attenuant, and detersive liquors; for by these, both the tenacity of the morbid matter will be thinned, and the vessels will be relaxed, so as to yield it a more easy passage through them. The form of such a decoction is given in our Author's Materia Medica, at the number of the present aphorism, composed of parsnip-roots, chich-roots, China-root, *&c.* to be always drank warm. But if all the surface of the first passages be so lined with aphthous incrustations that nothing can be swallowed, or if nothing of what is swallowed can be absorbed by the

[f] De Aphthis, p. 49.

the bibulous veins, there is then no way left but to endeavour to introduce as much as one can of the like liquors through the pores in the outward ſurface of the body; for which the moſt convenient forms will be thoſe of baths and fomentations, made of the like materials. Milk diluted with twice as much water has been of conſiderable advantage in this caſe, by immerging the feet and hands alternately in the heated mixture. The like liquors are alſo injected as clyſters, in hopes that, if the larger inteſtines are not plaſtered with ſo thick incruſtations, they may here be abſorbed, and ſent in to mix with the blood.

But the nouriſhment or diet muſt here be liquid, or thin and light, that it may be the better able to penetrate wherever the bibulous veins are as yet not wholly obſtructed. For this reaſon a decoction of bread is recommended, as it affords the beſt nouriſhment, and is wholly averſe to all putrefaction: a ſmall portion of honey is alſo added, that, by its ſaponaceous and abſterſive property, it may ſcour or cleanſe the incruſtations, and diſpoſe them ſooner to fall off; and thus at the ſame time it may alſo procure a paſſage for the aliment to be abſorbed. But wine is likewiſe intermixed here, becauſe it has a wonderful penetrability, by which it enters the bibulous veins, and in a manner opens a way for the nutritious parts of the bread to be received. For if a healthy perſon does but retain an ounce of freſh wine in his mouth for the ſpace of a ſingle minute, if it be then turned out of his mouth, he will be ſurpriſed to find it already vapid, or ſpiritleſs, the moſt ſubtle and fragrant parts of it being in that ſhort interval ſucked up by the inhaling veins of the mouth: nay, more, he will, by frequent repetitions of this, become at length fuddled, although he drinks or ſwallows not a drop of the wine. In this drink, therefore, a ſoft nouriſhment will be ſupplied to the body for recruiting the vital powers that now languiſh, and they will be alſo rouſed by ſuch a friendly and moderate ſtimulus as may enable them the more eaſily to throw out the morbid matter. Ketelaer found by experience the uſefulneſs of the like

thin

thin and vinous nouriſhment to be ſuch in this malady, that he pronounces[g], "the caudles of childbed-"women, prepared of Rheniſh-wine, eggs, cinna-"mon, ſugar, and ſaffron, to be alone often ſufficient "to anſwer all the intentions; and if it was not ſo "apt to increaſe the great heat and drought, it might "be reckoned the chief of all medicines for promo-"ting the eruption of the thruſh. But if thoſe ſpices are omitted, or are but very ſparingly uſed, in the wine that is well diluted by the decoction of bread, nothing of that kind need then be feared; more eſpecially if the quantity of the wine is proportioned by the order of a prudent phyſician, to be increaſed or diminiſhed as the greater or leſs violence of the fever may require.

2.] By thoſe things which are recommended in the preceding number, the powers of the body are upheld, a diluent vehicle is ſupplied to the blood, and its circulatory motion is moderately raiſed when too ſluggiſh, that the vital fluids urging more againſt the extremities of the obſtructed veſſels may move the obſtructing reſiſtances, and procure an open paſſage through thoſe canals by which the matter of the thruſh is to be driven out. But theſe aphthous incruſtations are ſometimes of a more conſiderable thickneſs; and growing dry, they ſo firmly cohere with the whole ſurface of the firſt paſſages, that the mere impulſe of the fluids urging behind is not ſufficient to make them ſeparate and fall off. In that caſe, then, it will be very uſeful to ſoften, macerate, or relax, and in a manner melt or diſſolve, the aphthous cruſt, that its more weak coheſion may allow it to ſeparate with a ſlight force. Therefore all watery drinks warmed will anſwer this purpoſe, if they are prepared from emollient and mealy ſubſtances; for theſe give the drinks a power of ſticking longer upon the parts, while ſimple water runs off from them immediately. To ſuch drinks it has been alſo uſual to add ingredients that have a ſoapy and ſcouring force, which ſtill better looſen and forward the ſeparation of the aphthous incruſtations,

[g] Ibidem, p. 52.

incruſtations, while by a gentle ſtimulus they irritate the ſubjacent living parts, and invite them to throw out humours that may alſo moiſten and relax the incruſtations after the ſame manner inwardly or in their lower ſurface. Thus decoctions of turnips, or turnip-radiſhes, or rather their expreſſed juice ſlightly boiled, and ſweetened with honey, will afford a remedy approved by long experience in thoſe parts where the aphthæ are the moſt popular and frequent[h]; but in defect of this, when turnip-roots are not to be had, the common people make uſe of ſmall-beer or ale ſweetened with ſugar. If the turnips are grated upon the raſp with their rinds upon them, their expreſſed juice will then be proportionably more ſharp and ſcouring. Veal-broths, likewiſe, boiled with rice and bruiſed turnip-radiſhes, will be very ſerviceable for continually fomenting and gargling the mouth; and, ſlowly ſwallowed, will be of the like uſe to the interiors part of the ſtomach and bowels thus affected, and will at the ſame time yield a good nouriſhment to the body: and for the ſame reaſons ſuch liquors may be alſo injected as clyſters. More forms of the like remedies may be ſeen in the Materia Medica correſponding to this and the foregoing number; for you have there the form of an emulſion, a decoction, and an expreſſed juice. The ingredients left after the preparation of ſuch decoctions are commonly applied to the neck in form of a cataplaſm, that all the ſurrounding parts may yield, and leſs reſiſt, or diſtreſs thoſe within.

It deſerves here to be remarked, that Sydenham[i], treating upon a thruſh that followed after an epidemical fever, recommends the uſe of the Peruvian bark, and affirms it to be more effectual for procuring a ſeparation than any other he knew. The bark he therefore gave when the thruſh tended not to a ſpontaneous ſeparation, but held on to a great extent of time. But the ſaid fever, although continual, was ſubject to moſt troubleſome fits of increaſe towards night, as if it had been

[h] Ibidem, p. 50.

[i] In Schedula Monitoria de novæ febris ingreſſu, p. 656.

been a double tertian, or quotidian [k]. From whence it appears, this fever was of the remitting kind, which like intermittents are diſpoſed to be removed or carried off by the bark: Whence it ſeems probable, that Sydenham firſt gave the bark for the quelling the fever in theſe patients; and then obſerved, at the ſame time, that the aphthous incruſtations happily ſeparated. But ſince autumnal epidemic fevers often reſemble thoſe that are continual, although they ſufficiently declare their nature by the fits of increaſe that return at ſtated intervals; and finding, that, when the violence of the fever is gone off, they afterwards change into true intermittents; I was thence encouraged to give ſometimes a decoction of the bark, to quell the fever in the weaker ſort of aphthous patients, where the incruſtations inclined to grow very thick; and in a decoction, becauſe, when there is a thruſh in the fauces, the bark itſelf is not eaſily to be ſwallowed in ſubſtance: however I was under ſome apprehenſions, leſt the aſtringency of the bark might indurate the thruſh; but conſidering, that of two evils it was moſt eligible to take the leaſt, I perſevered, and interpoſed a conſtant uſe of emollient decoctions to correct any harm that might be feared to enſue from the cortex. After I had entered upon this practice, it ſurpriſed me to find, that the aphthous incruſtations fell off ſooner in thoſe patients who had taken the bark, than in thoſe whoſe greater ſtrength and more moderation of the fever called not for the uſe of it; and it made me no leſs wonder at Sydenham's ſagacity in the treatment of diſeaſes. At that time I was not yet acquainted with the excellent virtues of the bark in ſeparating gangrenous or mortified parts; but now it appears to me, that the ſaid happy effects of the bark in ſeparating the aphthous incruſtations, very well confirms what was ſaid under the foregoing aphoriſm in reſpect to the aphthous incruſtations being of a gangrenous nature. And from hence it may probably be of uſe to make a cautious trial what the bark will effect in thoſe eruptions that often appear in countries where the thruſh ſeldom or

[k] Ibidem, p. 651.

or never appear with fevers. I have known this practice ſucceſsful in ſome inſtances; but have not yet been able to collect trials enow to warrant a poſitive determination in the matter.

3.] When the aphthæ fall off, the parts then appear raw or excoriated; and, if the incruſtations prove of conſiderable thickneſs, are likewiſe extremely painful, as was declared more at large at §. 988. Now theſe raw parts are irritated even by honey, and much more would they be irritated by the juice of turnips and turnip-radiſhes; and therefore only the moſt healing emollients may be here uſed, which not only eaſe and defend the painful parts, but alſo ſerve to relax and looſen by adhering longer to ſuch aphthæ as are not yet deciduous. The drink which is deſcribed in the Materia Medica, at the number which correſponds to the firſt of the preſent aphoriſm, will in this caſe be of good ſervice; as will be alſo the mixture that appears under the third number in the ſame place, compoſed of new cream, yelks of eggs, and ſyrup of white poppy-heads. For this will relieve the painfulneſs of the excoriated parts; and at the ſame time will moderate the too great effuſion of the thin juices that now copiouſly flow through the dilated and opened veſſels under the thruſh; to which laſt purpoſe the ſyrup of the poppy-heads greatly conduces, as we obſerve in daily practice that it alſo kindly checks other exceſſive diſcharges of the humours. I have ſometimes ſeen ſo great a quantity of the ſalival juices expelled, through the glandular outlets that open under the falling thruſh, as hath made it neceſſary to order the patients to ſwallow it, leſt they ſhould be ſuddenly exhauſted by the profuſion of liquids. But when once the pain begins to abate, mild corroborants, or reſtringents, may then be uſed to cauſe a gradual contraction of the over-dilated veſſels. Here then a decoction of the leaves of agrimony, with honey of roſes, as it ſtands recommended in the Materia Medica, will be of conſiderable benefit.

4.] But when there is danger, from the thruſh falling ſuddenly and entirely off, leſt the open and dila-

ted veſſels ſhould make too profuſe a diſcharge, and excite a diarrhœa or flux that would ſoon weaken and exhauſt; corroborants muſt then be called in to our aſſiſtance. But if the ſaid veſſels are too ſoon bound up, before the matter of the diſtemper be all expelled, freſh danger will ariſe from a return of the malady when the patient is now in the moſt weak condition. Hence it behoves the Phyſician to be firſt ſatisfied in this point, before he ventures upon the uſe of thoſe aſtringents or corroborants; and this more eſpecially ſince it was obſerved at §. 986, that the ſpace of ſome days are often interpoſed betwixt the falling and the ſprouting thruſh. Here, therefore, are recited the ſigns by the appearance of which we may be ſafely directed to ſuch a uſe of corroborants. For as long as any remains of the aphthous matter continue in the body not yet expelled, there is a fever that ſtays behind, which is often accompanied with ſome degree of a returning anguiſh or oppreſſion (§. 983.); the pulſe, too, is obſerved weak, and the patient languiſhing or low-ſpirited. But when once the whole matter of the diſeaſe is expelled, the pulſe always riſes to a greater ſtrength, and the patient becomes better able to ſupport the malady. But an hypoſtaſis or ſediment in the urine will ſtill better confirm that the matter of the diſtemper is concocted and ſubdued, as is declared in our author's Pathology [1]; and in the former parts of this work, that give the hiſtory of fevers, we explained this more at large under the heads of Concoction and Criſes. A form of ſuch a corroborant medicine may be ſeen in the Materia Medica, at the preſent number of this aphoriſm.

5.] It was formerly intimated (at 988.) that purgatives agree not with the thruſh, but often produce the moſt dangerous over-purgings: but here, in the cloſe of the diſtemper, a purgative is adviſed to carry off by ſtool the remains of the aphthous incruſtations that have fallen from the ſtomach and inteſtines, leſt, being there too long retained, they might corrupt, and produce new miſchiefs. But then only ſuch purgatives

1 H. Boerhaave Inſtit. Medic. ſect. 1016, 1017.

tives are here commended as have a manifeſtly reſtringent and corroborating power; ſuch as rhubarb, myrobalans, and the like, which from that property have gained ſo much reputation in the cure of diarrhœas and dyſenteries; becauſe by a kindly ſtimulus they purge out the irritating acrid, and at the ſame time confirm the over-looſe veſſels by their reſtringency. Such a form of medicine is given in the Materia Medica, at this number; where however, by an error of the preſs as it would ſeem, the doſe is expreſſed much too large, even to the quantity of an ounce and half; whereas a dram and half ſuffices for the preſent indication

§. 991. FROM the preceding hiſtory and treatment of the aphthæ many difficult queſtions and obſcurities in practice may be explained or anſwered; as, Why the thruſh appears in the end of a fever, joined with a diarrhœa, or a dyſentery? Why it is ſo familiar, with a flux, to children and to old perſons? Why thoſe ſymptoms more eſpecially attend under a heating regimen, with like medicines and diet, or when aſtringents are uſed in the beginning of the thruſh? Why, in the beginning of ſuch a fever, the exhibition of a purgative will often prevent thoſe aphthæ? Why moſt troubleſome and fatal hickups attend the worſt kinds of the thruſh? Why aphthous ulcerations of the mouth, fluxes of the bowels, and aboliſhed appetite, are reckoned together by Hippocrates? Why an aphthous incruſtation upon the coats of the ſtomach creates a lientery? Why the black ſort of the thruſh are accounted peſtilential? Why febrile aphthæ of the mouth, in women with child, preſage abortion? Why aphthæ attend putrefactions of the liver, lungs, *&c.*? Why a tumour, heat, ſuffocation, and quinſy, follow when the aphthæ are chilled or refrigerated? And why

a delirium, watchings, reſtleſs toſſings, and cold ſweats, make ſigns ſo fatal in this malady?

To the hiſtory of this diſeaſe, in purſuance of the method obſerved in cloſing thoſe hitherto conſidered, ſome practical deductions are ſubjoined.

Why in the end of a fever, *&c.*] This is what has been confirmed by the obſervations of Sydenham, as we formerly related at §. 983. But the chief reaſon ſeems to be, that, the moſt fluid parts of the humours being exhauſted by the profuſe evacuations, the more viſcid juices that remain are more diſpoſed to depoſite their tenacity upon the final veſſels in the interior ſurfaces of theſe parts, and there form a thruſh; but more eſpecially the particular diſpoſition of the malady (hardly to be explained by a knowledge of the cauſes, and almoſt only to be learned by faithful obſervations) is the principal reaſon why its matter ſo generally ſettles upon theſe parts. For Sydenham [m] confeſſes, that in a dyſenterical fever, (ſo called by him, becauſe it was joined by all the ſymptoms of an epidemic dyſentery that was then common, except the flux or purging itſelf with what depends on it), he found a greater inclination to produce the thruſh, than he had ever before obſerved in any other fever. Now, in that fever, the origin of the thruſh could not be derived from profuſe diſcharges of the more fluid humours by ſtool, but muſt have been the reſult of the peculiar nature of the diſtemper itſelf.

Why ſo familiar to children and old perſons, *&c.*] This is what we formerly remarked at §. 982; and Hippocrates [n] alſo, in reckoning up the principal diſeaſes that accompany the ſeveral ages of mankind, obſerves, that the thruſh oftener happens to new-born, and little infants. But we obſerve plainly, that a great quantity of a tough mucus or phlegm lies uſually collected together in the firſt paſſages of new-born children, which they either reject by vomitings, or expel in looſe ſtools; and therefore we are thus aſſured a great deal of tough phlegm drains in theſe from the ends

[m] Sect. iv. cap. 4. p. 236, 237. [n] Aphor. 24. ſect. iii. Charter. Tom. IX. p. 119.

ends of the diſtilling veſſels, within the extremities of which, if it be arreſted, it may form aphthous incruſtations, but generally of the milder ſort, and quickly exfoliating; and when, after this, the ſaid veſſels over-dilated make a very copious depoſition or evacuation from the blood of the like viſcid humour, the children have then a purging by looſe ſtools, which may continue to good purpoſe until the morbid matter is expelled. Ketelaer [o] has expreſſed his ſurpriſe at obſerving, that children will lie, with ſo little attendance, and ſuſtain, even with ſtrength and cheerfulneſs, the aphthæ, with purgings, for many days and nights together; while in adults, the uſe of purging is ſo highly to be diſtruſted: and therefore he obſerves, that theſe are not ſo much "imitable courſes "of nature, as they are extraordinary exceptions;" *haec non tam exempla, quam monſtra eſſe.* But the reaſon of this appears plainly enough from what we have here ſaid.

But in old perſons, when they are invaded with acute diſtempers, the vital powers are much weakened in their decaying bodies; and, being leſs active, they require a longer time to concoct and ſubdue the matter of a diſtemper: and the critical diſcharges and tranſlations are in ſuch made much more ſlowly, and by interrupted or repeated efforts of languiſhing nature; while the ſame is more impetuouſly made altogether, by one continued endeavour, in thoſe of a robuſt age. But an eruption of the thruſh, as we formerly obſerved, generally exterminates the matter of the diſeaſe by ſuch interruped or repeated efforts or ſproutings: and as in old age all the humours more abound with a ſluggiſh lentor, therefore their alimentary paſſages are more loaded with a clogging phlegm, while their outward ſkin appears dry, ſhrivelled, and juiceleſs. Hence, therefore, we have another reaſon why the thruſh is often ſeen in old perſons, and is then ſo commonly dangerous, as we remarked formerly at §. 982.

Why more eſpecially under a heating regimen, me-

[o] De Aphthis, p. 47.

dicines, *&c.*] This is an obſervation of Sydenham's, as we formerly mentioned at §. 983: for when by a heating regimen, with the like medicines, the more fluid and moveable parts of the humours are diſſipated from the body, the remaining juices become leſs fluxile, and are apt to ſtick and dry up in the extreme openings of the veſſels; both which greatly conduce to the production of aphthæ, when the natural genius of the diſtemper alſo promotes the ſaid eruption. But aſtringents will alſo have the ſame effects, as they ſhorten or draw together the ſolids, and thicken the fluids; but this more eſpecially, if ſuch are imprudently given in the beginning of the diſtemper, or where there is a diarrhœa, or a dyſentery, and the matter of the diſeaſe not yet carried off from the body.

Why, in the beginning of ſuch a fever, a purgative prevents, *&c.*] Becauſe this will very often expel the ſtimulating acrimony, that is both the cauſe of the dyſentery, and of the conjunct or conſequent fever. Even Sydenham[P] was often obliged to repeat his purgatives, to exterminate wholly ſuch a fomes or matter of the diſtemper. But by this he prevented the epidemical or other matter of the diſtemper, whether by its long ſtay in the body, or by the long continuance of the fever, from ſo altering the humours as would make it afterwards neceſſary for them to produce ſuch an aphthous deſpumation.

Why moſt troubleſome and fatal hickups attend the worſt kinds of the thruſh?] There are two ſtages of the thruſh which are liable to hickups: either in the beginning of their eruption, when the aphthous matter breaks out copiouſly about the upper orifice of the ſtomach, even before they appear in the mouth or fauces, ſo as to cauſe an irritation upon the ſtomach and diaphragm, as we formerly ſhewed at the end of §. 983; or elſe in the termination of the diſtemper, when the aphthæ are falling off, and when the ſaid cardia, or upper opening of the ſtomach, and its interior ſurface, are in a manner excoriated and painfully irritated by every thing ſwallowed into the body, as

P Sect. iv. cap. 4. p. 241.

as we intimated before at §. 988. But the hickuping obſerved in the beginning of the thruſh is of the worſt preſage, as it denotes the interior ſurface to be infeſted with very thick aphthæ, which thence gradually aſcending up the gula, at length fill the whole extent of the fauces, where they are obſerved to be of the worſt diſpoſition, and commonly fatal: Whereas the hickup that attends the falling off of the thruſh, is indeed troubleſome, but rarely miſchievous or fatal. This is alſo confirmed by Sydenham [q]; namely, that ſuch an hickuping will remain for ſeveral days after the fever is removed, and goes away ſpontaneouſly as the patient recovers ſtrength. But he diligently inculcates to phyſicians, "That the patient is in no "danger from an hickup, at the cloſe of this aph-"thous fever, unleſs he be over-officiouſly crammed "with too many uſeleſs medicines; and in that caſe "death may ſtand inſtead of the doctor:" For it is neceſſary that only the lighteſt and moſt emollient nouriſhments be here given, to avoid irritating the raw or painful parts; for by theſe they ſoon heal or cicatriſe, and then the hickuping ceaſes. But where the phyſician without reaſon ſuſpects that offenſive humours are lodged about theſe parts, and then attempts their removal by vomits or purgatives, the ſtomach often becomes inflamed by ſuch treatment, with the utmoſt danger to the patient.

Why aphthous ulcerations of the mouth, fluxes of the bowels, and aboliſhed appetite, are conjoined together by Hippocrates?] From what we propoſed at §. 978, it appears very probable, that the ancient phyſicians were acquainted with the febrile thruſh, that is obſerved by the moderns to attend or follow many acute maladies; even though they have given the ſame denomination of aphthæ to a kind of little ulcerations that widely differ from the aphthæ which we here deſcribe. But from the whole hiſtory of the thruſh hitherto given, it plainly appears, that there is no room for wonder if the bowels become dyſenterical or diſturbed, and the appetite aboliſhed, ſince thoſe incruſtations

[q] In Schedula Monitoria de Novæ Febris Ingreſſu, p. 656.

ſtations plaſter up the whole tract of the firſt paſſages; and therefore theſe might very well be reckoned together by Hippocrates. It does not however plainly appear, that Hippocrates[r] would intimate to us by this paſſage, that the diſturbance or dyſentery of the bowels, and deſtroyed appetite, are to be conſidered as effects conſequent from thoſe aphthæ. For he there relates the epidemical conſtitution which follows a warm, moiſt, and wet ſeaſon of the year, in which, among the other maladies that he obſerved riſe, he reckons up "the thruſh, or ſore mouth, and the like eruptions "or tubercles in the genitals, ſore or inflamed eyes, "red blotches of the ſkin, fluxes of the bowels, and "loathings of the food." Since, then, it appears in the text, that theſe are not immediately joined one to the other; but that three very diſtinct diſeaſes are reckoned, before he mentions the diſturbance of the bowels and the loathings of the food; it therefore would ſeem, that in this paſſage he only reckons up a mere ſucceſſion of the principal maladies that were then popular, without meaning to intimate that the two laſt were any conſequences of the thruſh.

Why an aphthous incruſtation of the coats of the ſtomach creates a lientery ?] It was propoſed formerly (§. 719.) as a definition of the lientery, "That it is "ſuch a poliſh or ſmoothneſs of the inteſtines, as ren-"ders them unable to retain any thing that is ſwal-"lowed into them; but directly lets all things taken "in, flow indigeſted through them." For it is peculiar to this malady, that the nouriſhments are let thro' the body unaltered. But it is demonſtrated in phyſiology, that a change or digeſtion of the aliments requires not only a proper force of action from the ſtomach and inteſtines, but likewiſe a due proportion of the indigenous, or ſalival, and bilious fluids, to be ſlowly incorporated with the ingeſted nouriſhments. Now this intimate commixture is wanting when the ſtomach and bowels are incruſted with thick aphthæ, while for the ſame reaſon none of the juices are abſorbed by the lacteal and meſenterical veins; and therefore

[r] Epidem. lib. iii. Charter. Tom. IX. p. 261.

fore, as there is here nothing added to the nouriſhments in the bowels, ſo neither is any thing taken from them, and of courſe they flow thence unaltered. But when thoſe aphthous incruſtations fall from the ſtomach and inteſtines, then there is ſo great a flux enſues from the now open and over-dilated mouths of the veſſels (ſee §. 988.) that all the ingeſted nouriſhments are in a little ſpace of time waſhed away by them in the ſtools, with little or no alteration made in them.

Why the black aphthæ are accounted peſtilential?] If the aphthæ appear of this colour at their firſt eruption, they are a ſign the matter of the diſeaſe, this way exterminated, is of ſo malignant a nature, as immediately turns the ends of the retaining veſſels gangrenous. But if, as is more generally the caſe, the new aphthæ ſprout up, without the old ones falling off, and they all join together into thick incruſtations; in that caſe the outer ſurface often dries and turns black, and, the ſubjacent living veſſels being ſuffocated by the incumbent cruſt, a gangrene invades the affected parts. The fatal termination therefore of both theſe malignant aphthæ appears ſufficiently plain.

Why aphthæ of the mouth, in women with child, preſage abortion?] For we have ſeen, that they hinder the due preparation of the aliments, and abſorption of the chyle; and therefore, as the gravid mother requires nouriſhment to ſuſtain two bodies at the ſame time[s], the want of chyle will be ſoon deſtructive to the fœtus, more eſpecially as it muſt have ſuffered conſiderably already from the mother's humours being vitiated by the preceding diſtemper, and changed much from the healthy ſtate they ought naturally to have. But how great theſe changes are in the humours, may appear from the complaints themſelves that uſually precede the thruſh, and which were enumerated at §. 983. Hippocrates tells us, that *a thruſh of the mouth brings a flux of the bowels to women with child*[t]. In another place he condemns indeed the thruſh

[s] Celſ. lib. ii. cap. 10. p. 78.

[t] Ora aphthoſa uterum gerentibus alvos humectant. *Coacar. Prænot.* n° 544. *Charter. Tom. VIII. p.* 884.

thruſh in gravid women, but propoſes the flux or looſeneſs of their bowels more doubtfully: for his words are, *The thruſh of the mouth is bad in women with child; for may it not bring a flux*[u]*?* But then he pronounces in his aphoriſms, that *if a woman is big with child, ſhe is in danger of miſcarrying by a copious or frequent purging*[w]. Since, therefore, for reaſons above mentioned, a flux or purging of the bowels is to be feared from the thruſh, it appears from thence plainly enough why the thruſh, in gravid women, preſage miſcarriage. Foeſius[x] indeed doubts whether Hippocrates, in thoſe places of his Coan Preſages, does not intend the thruſh in the mouth of the uterus; ſince, in another place, he aſſerts that the thruſh alſo invade the genitals, as was obſerved by us under §. 978. But the mouth of the womb lies higher up than to ſhew any thruſh to one's obſervation in the gravid mother; nor can one thence underſtand, why they ſhould be alſo followed with a flux or purging to be feared, the reaſon of which appears intelligible enough when the mouth or alimentary way becomes infeſted by the thruſh in gravid women. He has beſides another moſt remarkable paſſage to this purpoſe: *Fluxes that are aphthous and painful, are a miſchievous ſign in women with child; but a bloody-flux is the moſt fatal to them*[y]. Where we are to obſerve, that he treats not of the thruſh of the mouth barely, as in the former quotations; but only pronounces it an aphthous flux, or purging of the bowels, which is at the ſame time painful. However, it muſt be allowed, that the thruſh in the genitals is often extremely painful, as was remarked at §. 978: and if we conſider, that ſuch a painful irritation about the genitals may eaſily bring on the birth-pains, by which the fœtus will be prematurely brought forth; the reaſon will be evident

[u] Ora aphthoſa uterum gerentibus non ſunt bona. Num et alvi humectantur? *Coacar. Prænot.* nº 514. *ibid. p.* 882.

[w] Mulieri utero gerenti, ſi alvus multoties profluat, abortus periculum eſt. *Sect.* v. *Aphor.* 34. *Charter. Tom. IX. p.* 214.

[x] Hippocrat. Oper. Tom. I. p. 202.

[y] Uterum jam geſtantibus aphthoſæ fluxiones dolentes, malum; hæmorrhois his, peſſimum. *Coacar. Prænot.* nº 529. *Charter. Tom. VIII. p.* 883.

evident enough, why Hippocrates ſhould alſo condemn the little ulcerations or thruſh that invade the genitals of gravid women. This is the more confirmed, becauſe in the ſame preſage he condemns a conjunct bloody-flux with it as the moſt fatal ſign; for that uſually produces a teneſmus, or repeated endeavour to empty the bowels of the abdomen. Now the labour-pains reſemble thoſe of a teneſmus in its moſt violent degrees; eſpecially in the final throes, by which the infant is brought into the world. If then the genitals be irritated by the ulcerations, and the rectum excited to a teneſmus by the ſwelling piles, it will be no wonder if ſuch uneaſy throes are produced by them, as muſt excite the ſtronger pains of delivery, and induce a miſcarriage; which Hippocrates tells us is even to be feared from a teneſmus only, ſaying, *A teneſmus coming upon a woman with child, induces a miſcarriage* [z].

What has been here ſaid likewiſe renders our former opinion ſtill more probable, namely, that the ancient phyſicians were acquainted with both kinds of the aphthæ or thruſh: for the former Coan Preſages ſeem to relate to the thruſh that invades the mouth and firſt paſſages; and the latter of thoſe preſages to the other kind, or ulcerating thruſh, that invades not only the mouth, but the other parts of the body likewiſe, with true ulcerations, as we ſhewed at §. 978. I know indeed, that Duretus, whom I reſpect as one of the beſt commentators on Hippocrates, expounds this laſt Coan Preſage in a different manner, making the *aphthous flux* the ſame with a *thruſh of the mouth*, which I think is plainly enough confuted by what we have above advanced. Beſides, in this conſtruction, Duretus [a] muſt be obliged to give ſuch a meaning to the words of Hippocrates as will no where agree with thereſt of his works, *viz.* that *hæmorrhois* here ſtands for a ſpitting of blood from the eroded veins of the lungs; which he endeavours to ſupport by a text from Ariſtotle

[z] Mulieri utero gerenti ſi teneſmus obortiatur, abortum efficit. *Aphor.* 27. *ſect.* vii. *Charter. Tom. IX. p.* 304.

[a] In Coacas Hippocratis, p. 464.

ſtotle, which makes that word ſtand for any ſort of bleeding. But this is plainly to diſtort the ſenſe of Hippocrates without reaſon; ſince the commonly received ſenſe of the term ſo well agrees with what Hippocrates ſeems to intend by that paſſage.

Why in putrefactions of the liver, lungs, *&c.*] This principally happens in the laſt ſtage of a fatal conſumption of the lungs, when the patient melts away in nocturnal ſweats, as we formerly remarked at §. 983. But the ſpitting then uſually abates or ſtops; and ſo the ulcerous or corrupt matter is not carried off, but goes into the blood, already exhauſted of its more fluid or ſubtle parts, whereupon nature as her laſt effort makes an unſucceſsful depoſition upon the ſurface of the alimentary paſſages: while, at the ſame time, it is alſo uſual for the nocturnal ſweats to be greatly diminiſhed before the thruſh break out.

Why from chilled or checked aphthæ a quinſey, ſwelling, *&c.*] Namely, whenever the patient makes too free with the very cold air, or takes drinks actually cold, or uſes gargles in the ſame condition: for then the mouths of the aphthous veſſels are conſtringed or bound up by the cold, the aphthous matter itſelf is condenſed in them, and the incruſtations formed by it are more compacted together; by all which the depoſition and expulſion of the matter of the diſtemper are hindered: upon this the fever directly increaſes, and urges the humours with more force upon the obſtructed or diſtreſſed parts, in which conſequently ariſe a heat and ſwelling; and, in the fauces, a moſt dangerous quinſy will thus very ſuddenly be produced. Hence Ketelaer [b] who had ſeen the worſt miſchiefs from cold applications, always adviſes, that every thing be adminiſtered tepid or moderately warm. Even hence it is, that phyſicians often inveſt the throat with plaſters and poultices, that all the circumjacent parts may be retained in a due ſtate of warmth and relaxation.

Why a delirium, reſtleſs toſſings, watchings, *&c.*] Becauſe they denote the vital powers to be ſinking, and

[b] De Aphthis, p. 49, *&c.*

and that the matter of the diſtemper is either ſo abundant, or ſo malignant, that although a part of it is already thrown off in the thruſh, yet the remains ſuffice to diſturb all the functions of the body; and that it begins now to invade the finer veſſels of the brain itſelf. But for the patient to be able to recover, all thoſe bad ſymptoms which go before the eruption of the thruſh muſt either go quite off, or greatly diminiſh; "ſince critical appearances, that bring not the "diſtemper to a criſis or extermination, are either "fatal, or marks of extreme difficulty in the cure "or termination of the malady," (ſee §. 741.) But ſince there are here ſo many malignant ſigns that concur together, it is eaſily apparent, that not a difficulty of the criſis, but certain death itſelf is to be expected.

§. 992. IT is therefore a rule, That the pellucid, white, thin, and ſcattered aphthæ that are ſoft, ſuperficial, little apt to ſprout anew, and eaſily falling off, afford a good preſage: but, on the contrary, thoſe which are of a very opaque white, yellow, brown, or black colour, running together into cloſe, thick, hard, and tough incruſtations, perpetually either ſprouting or ulcerating, afford the very worſt preſage.

At §. 984. we treated upon the various ways in which the aphthæ uſually break; and from thence we deduced their prognoſis. Of their colours we treated at §. 985, and of the various preſages to be derived from them: and laſtly, at §. 986, we ſpoke of the variety that obtains in reſpect to their ſeparation, and reiterated ſproutings; and from theſe again we drew various concluſions in reſpect to the events of the thruſh. In the preſent paragraph, then, we have all thoſe particulars collected together, which are obſerved in the good and bad thruſh, that the phyſician may be thence enabled to foreſee and foretel whether

health or fatality may be expected. But as we have already considered all these particulars in the above mentioned places, there is no occasion to insist further upon them here.

END *of the* NINTH VOLUME.